

it. American FRUIT GROWER

DECEMBER • 1948

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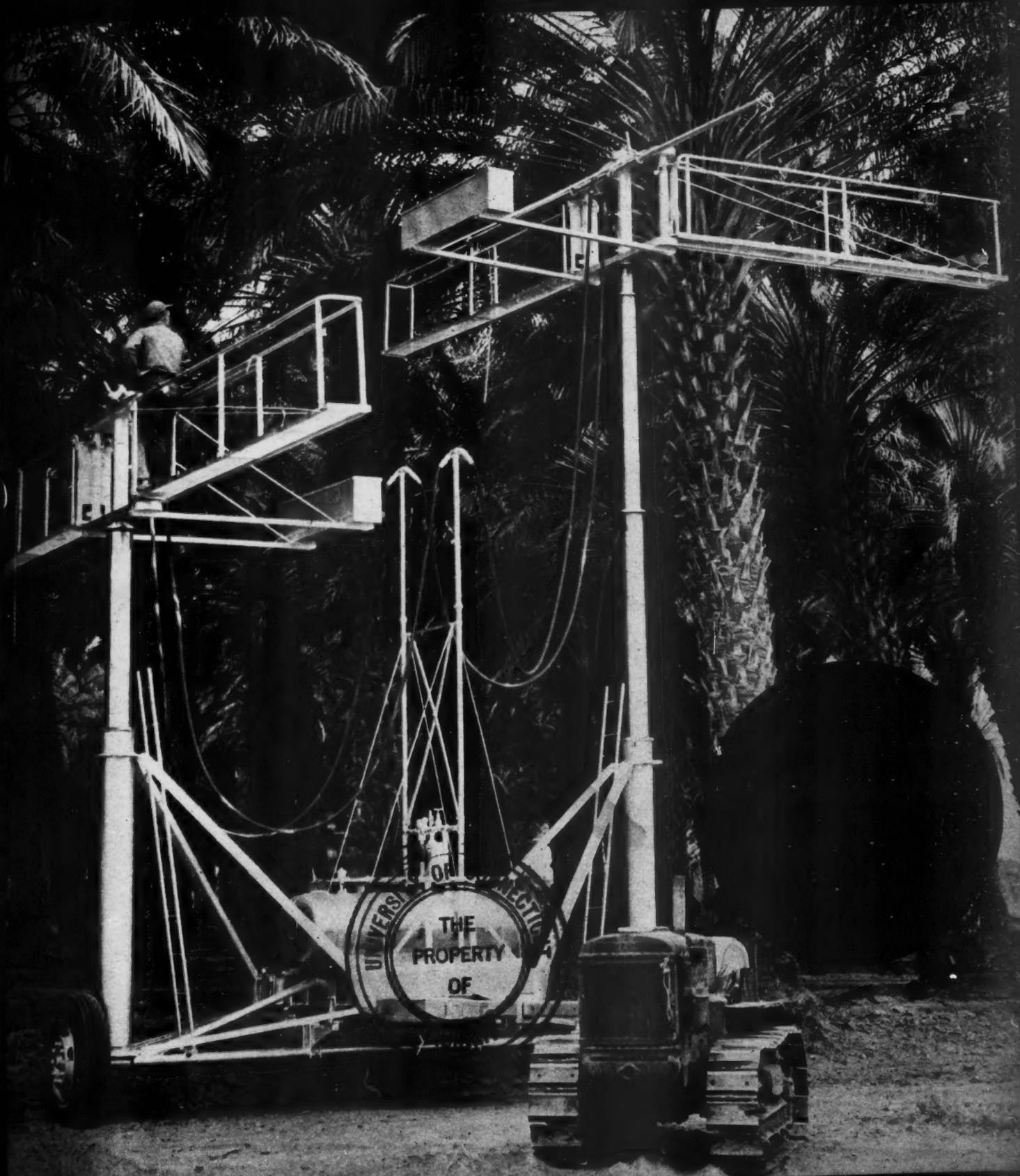


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DECEMBER

1948

VOL. 68

No. 12

CONTENTS

THIS MONTH'S COVER

Just as Daniel Boone of the coon skin cap was an American pioneer so is one of his descendants, Travis M. Boone of Hayward, Calif. After 10 years of pioneering work, he built the Boone Data Tower which appears on our cover this month and which is one of the several revolutionary orchard machines being developed by growers on the West Coast. The two telescopic towers can be extended up to 40 feet and can be folded to 13 feet for highway traveling under underpasses and telephone lines. The tower is operated hydraulically and is used for pruning, thinning, and harvesting. (Photo by F. Hal Higgins.)

Letters to the Editor

Processing

By W. V. Cruess

The Coming Evolution in Orchard Machinery

600,000 Frozen Cherry Pies

Stepping Up Sales of Florida Citrus Juices

By Raymond D. Robinson

Why Aren't We Selling More Apple Juice?

By J. J. Willaman

Nationwide Fruits

Pears, Nuts, Citrus, Peaches, Grapes, Apples

State News

Marketing

Calendar of Coming Meetings and Exhibits

In the News

Nut Growers News

Ramblings

Editorial Page

AMERICAN FRUIT GROWER

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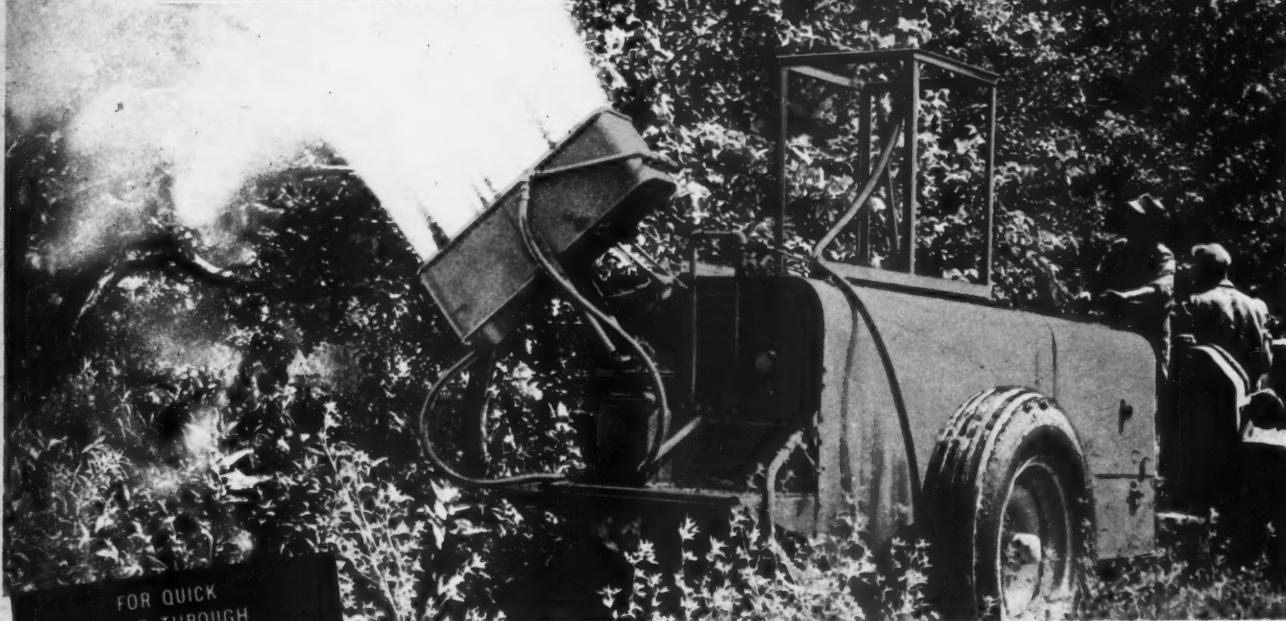
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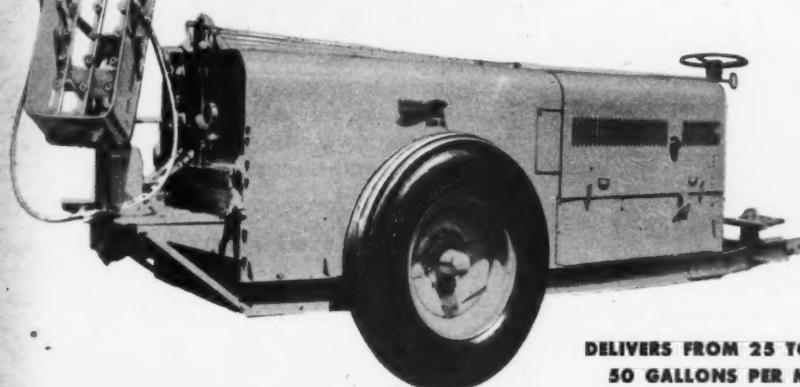
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In 1948, dusting in the rain with Kolodust was a completely successful operation for a record number of growers against that stubborn enemy, apple scab. Hundreds of growers have relied on Operation "Kolodust" for years and the proof is in higher producing orchards and better packs of apples.

Niagara planned Operation "Kolodust" with weapons best suited for the battle—a Niagara Cyclone Duster for all kinds of weather; and Kolodust, a non-caustic, rain-penetrating dust. In Kolodust, the fused Bentonite sulphur particles, colloidal in nature, so fine that no screen yet devised can measure them, have great spreading and covering ability. And they cling to fruit and foliage through and after long and heavy rains when apple scab spores are there ready to strike. Dusting in the rain with Kolodust is the very essence of "timeliness"—the proof is in a lower-cost operation and greater success in apple scab control.

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LETTERS TO THE EDITOR

DDT and Codling Moth

Dear Sirs:

I wish to disagree with an editorial in your June issue in regard to where one would find a wormy apple since DDT appeared on the scene. In this part of Michigan, although all of us apple growers sprayed with DDT, we have never had so much codling moth as we did this year.

The pests seem to have immunized themselves to it already. This also applies to the common house fly. In 1947 we got perfect control of both these pests. Onekama, Mich. M. E. Smith

Reader Smith's question is a puzzler for scientists. Some agree that resistant species of insects are developing. Others are inclined to blame inadequate spraying, ineffective formulations of DDT, or unusual weather conditions. For example, it is a common saying that the more sour cherries a man had in 1948, the more codling moth he had. This is just another way of saying that the cherry crop interfered with good codling moth control. For more information on this, watch for the coming February Spray Issue of AMERICAN FRUIT GROWER. —Ed.

Macoun Apple

Dear Sirs:

Will you please tell me what the Macoun apple is? I have heard it is a cross between a McIntosh and Cortland; also between a McIntosh and some kind of a Jersey.

Rexford, N. Y. Mrs. Frank Barrett

Macoun is a McIntosh-type variety developed by the New York State Agricultural Experiment Station from a cross between McIntosh and Jersey Black. It is an attractive variety with a rich, dark red color and with excellent eating qualities. Some growers consider it their best variety for quality. However, the tree is inclined to bear every other year and to produce small-sized fruit unless heavily thinned. This is its limitation. Other McIntosh sorts are Cortland, Kendall, Melba, and Milton. —Ed.

Controlling Curculio

Dear Editor:

In January, 1948, for curculio control, I radically pruned a peach tree by cutting out at least two-thirds of the top which contained two varieties. This pruning was supplemented with fertilizer and irrigation. The effect of this combined treatment induced a very vigorous growth. The limited number of fruits which formed grew very rapidly. Because of this rapid enlargement of those fruits, the larvae, which may have hatched from the eggs deposited by the curculio, were evidently trapped and squeezed to death. The adult curculio in the process of depositing their eggs caused some surface scars which healed without any impairment of quality in the matured fruit.

On a nearby peach tree, which was not pruned or fertilized, all of the fruits of the crop for 1948 were severely damaged by the larvae of the curculio which developed into full grown worms.

Mr. Charles Faulkner, an eminent fruit grower of Waco, Texas, who in one year of the late '90's shipped more fruit than

any other grower in Texas in that year, reported that the curculio was effectively subdued in his plum orchards by methods similar to those outlined above. Mr. Faulkner was a member of the Board of Trustees of Baylor University. San Antonio, Tex. Chas. F. Ward

The curculio is a redoubtable enemy. Although your methods apparently were satisfactory for one season, despite lessened yields, it is a question whether they could be relied upon year after year. It is certainly true that many curculio larvae are crushed in hard and rapidly growing fruits. It is also true, however, that peach trees side by side in the same orchard may have widely different degrees of curculio infestation.

Curculio behaves peculiarly at times, and it is difficult to draw conclusions from one season's results.—Ed.

More on Search For Old Varieties

Gentlemen:

In the September issue, one of your readers asked for the name of a tomato- or apple-shaped russeted variety of pear ripening in October or November. Perhaps a Swiss reader may help to solve this identity mystery. The description suits perfectly the pear, Olivier de Serres, obtained in France in 1861.

It is seldom cultivated now as it is more an amateur variety than a commercial one.

Marcelin, Switzerland A. Lugeon

Gentlemen:

In my small apple orchard I have one tree known as Strawberry Pippin; it has a dark red skin with little white dots all over, is just a little flat, ripens a few days after Jonathan, and has a very fine flavor. I should like to plant a few more trees of this variety as it is a great favorite of ours, but I cannot find it listed in any nursery catalog I receive. Can you tell me where to get more trees of this variety?

St. Louis, Mo. Wm. R. Gentry, Jr.

There are a half dozen varieties which have gone under the name, "Strawberry." The most common of these is "Late Strawberry," also called "Fall Strawberry." The fruits of this variety, however, are roundish oblong rather than flat.

Chenango is also called Strawberry Pippin, locally, in some sections of Missouri. —Ed.

Dear Sir:

I am writing to try and trace an apple that was known all over the State of Virginia as the Vestal apple. It was first brought over from England in William Penn's time. The man who brought the apple to America settled in Virginia and was supposed to be the first to raise Vestal apples in this country. I would like to get a start of the apple trees; I believe the man who brought the apple over is one of my ancestors.

Valley Springs, Calif. Harry G. Vestal

"Vestal" is a synonym of "Maiden Blush" used almost exclusively in Virginia. Where it acquired this name is unknown. Maiden Blush is an old variety, first described by Coxe in America in 1817. It is an old favorite but is no longer grown commercially to any degree. Nurseries still carry it.—Ed.

FREE

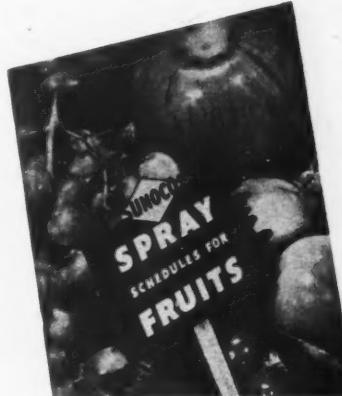
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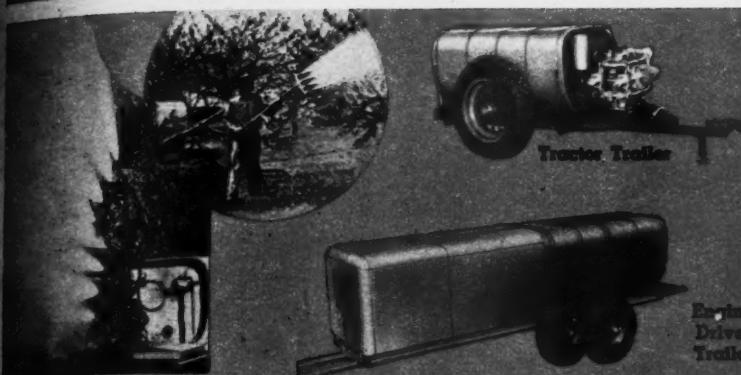
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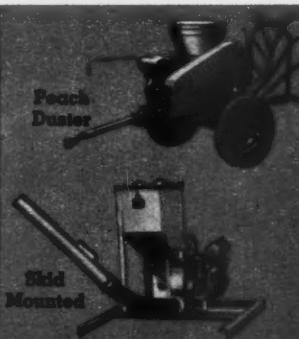
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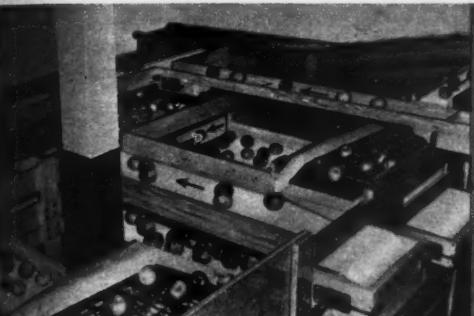


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"Best built equipment in the field" is the verdict of packers and growers who have "Friend" Sizers. Patented features prevent dragging or rolling of fruit. Built with fewest moving parts, and extra strength at all critical points. There are combinations for every need—from the small grower to largest commercial packer.

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Processing



Processing Industry Provides Year-around Markets and Is a Large Outlet for Many Fruits

By W. V. CRUESS, University of California

IN SOME fruit growing areas only the culls and lower grades of fruit are sent to the fruit products plants. This is the case with apples in such districts as Sebastopol, Calif.; Yakima, Wash.; and Hood River, Ore. The principal market for first-grade fruit in these districts is the fresh market, which is largely out-of-state.

In some other localities the fruit is grown primarily for processing. Thus, in California cling peaches are grown almost exclusively for canning; apricots for canning, drying and freezing; prunes for drying; Muscat grapes chiefly for production of raisins; and Zinfandel grapes for wine.

In Oregon, Washington, and California, a large proportion of No. 1 Bartlett pears goes to the canneries; and in Hawaii, practically the entire pineapple crop is canned. The freezing industry takes most of the berries of the Pacific Northwest.

Freestone peaches, on the other hand, find a three-way market; namely, to canners and freezers, to dryers, and to the fresh market. Similarly, sweet cherries find their way to the fresh market, to canners, to barrelers for maraschino, and to freezers. But some cherries are grown for freezing and for canning and are ultimately consumed as cherry pie.

Florida and Texas grapefruit began as a fresh market deal but now reach us principally as canned juice. On the other hand, in California the use of citrus fruits for juice canning is more in the nature of a balance wheel.

Canning, juice production, drying, freezing, wine making, and other processing practices convert perishable fruits into relatively non-perishable products, into forms in which

they can be and are distributed and used throughout the year throughout the world. Thus, they increase the world's food supply by preventing loss by spoilage of the fresh fruits and provide the fruit grower with a world-wide instead of a local market.

Canneries, freezers, wineries, dried fruit packers, and other fruit products plants give employment to many thousands of workers and thereby add to the annual production of the country's wealth and purchasing power. In California and Florida, for example, the canning industry brings into these states many millions of out-of-state dollars that go far toward supporting the economy of these states.

Banks find a good market for their funds to canners, freezers, and others on a commodity short-time loan basis for financing each season's pack and at present investors are receiving excellent dividends on the stocks of some processing concerns.

In cases such as the California Walnut Growers, California Fruit Grow-

ers Exchange, California Almond Growers Exchange, Sun-Maid Raisin Growers, and California Prune and Apricot Growers Association, most of the crop is not only produced by the growers but is also processed and the products sold by the growers collectively as associations. While this situation may often give the grower a rather painful headache, nevertheless, it assures him of a market and if the price is low, he can have a voice in trying to improve it.

Canned, frozen, and dried fruits, fruit juices, jams, and jellies give the grocery trade a profitable year-round line of food products. Other businesses also profit from the processing of fruits and the distribution of the products.

In general, the retail prices of dried fruits, juices, and canned fruits have not risen as much as those of some other foods, nor as much as those of the fresh product. Take apples and apple juice, for example!

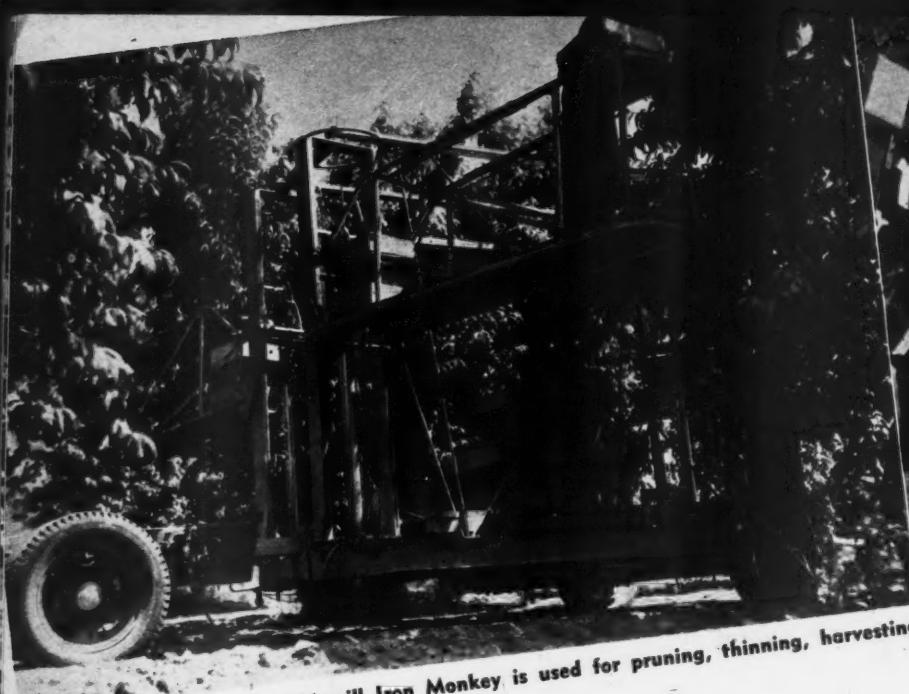
(Continued on page 29)

**Recent U. S. Packs of Canned Fruits in Cases of No. 2½ Cans
(In Thousands)**

| Year | Apples | Apple Sauce | Apricots | Cherries Sour | Clingstone Peaches | Pears | Fruit Cocktail | Freestone Peaches |
|------|--------|----------------|----------|------------------|-----------------------|-------|-------------------|----------------------|
| 1945 | 1,100 | 1,560 | 4,110 | 1,160 | 12,250 | 4,540 | 6,030 | 2,030 |
| 1946 | 3,010 | 6,530 | 10,590 | 2,510 | 17,280 | 5,470 | 7,750 | 3,050 |
| 1947 | 2,080 | 4,530 | 3,250 | 1,790 | 15,320 | 5,730 | 9,390 | 3,700 |

**Recent U. S. Packs of Canned and Bottled Fruit Juices
as Cases of No. 2½ Cans or Approximately 24 Quarts
(In Thousands)**

| Year | Apples | Grapes | Grapefruit | Orange | Orange- Grapefruit Blend | Pineapple |
|------|--------|--------|------------|--------|--------------------------------|-----------|
| 1945 | 1,453 | 1,995 | 19,260 | 14,228 | 7,016 | 7,954 |
| 1946 | 3,524 | 2,550 | 22,483 | 19,397 | 11,800 | 8,671 |
| 1947 | 1,181 | 3,400 | 15,200 | 17,135 | 9,076 | 8,206 |



THE COMING EVOLUTION IN ORCHARD MACHINERY

**A Few New Models Are Already
Here and More Are on the Way**

PICKING FRUIT with monkeys, pruning with squirrels, lifting with elephants—even though they be mechanical—is actually a dramatic achievement which augurs a coming evolution in orchard machinery. The early models of machines to replace the man on the ladder, the man with the hoe, and the man with the strong back are here and already in use in western orchards. Mechanization of formerly unbelievable tasks is stirring the imagination of fruit growers whose labor costs and production problems have reached the point where losses are discouraging and the future foreboding. Mechanization to the nth degree again becomes the magic word, the plan and the policy of astute growers who never cease in their attempts to conquer obstacles and who now see, in mechanization, reduced costs and fruit at prices which will mean larger purchases by lower income groups. It is difficult to imagine machines to do work which requires almost human-like touch and conception. Yet today a beginning has been made which bids fair to start a new revolution in orchard machinery.

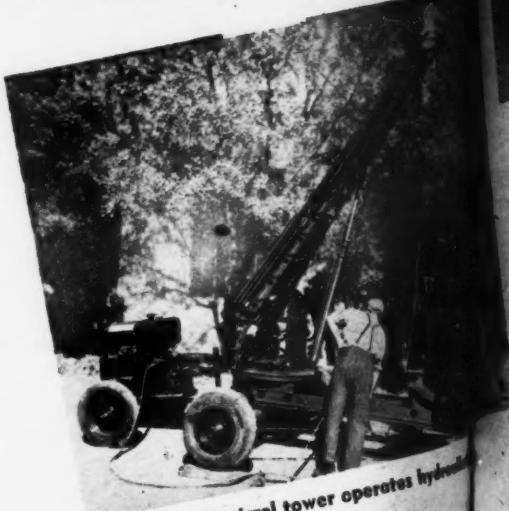
Wheatley Mobile Platform

To get workers up close to the tree for pruning, thinning, and harvesting, Napa Valley, California, prune grower Dave Wheatley has

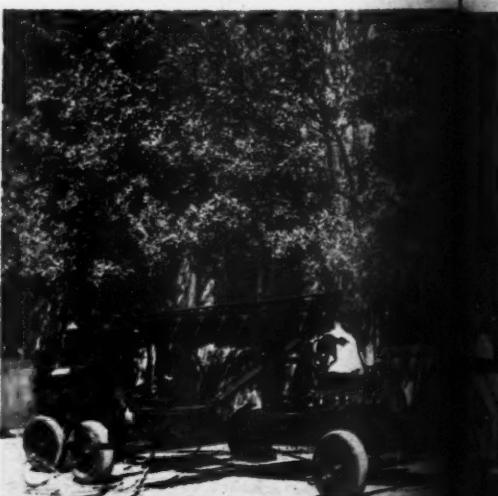
built an eight-foot platform above an old Chevrolet chassis and has extended steering wheel and controls to the platform above. The outfit is self-propelled, having a small gasoline engine in the center of the auto chassis to move the platform as well as to maintain air pressure for operating the power pruner. So well did Wheatley's first platform work that he built a second one with 18 inches more height for his older orchard.

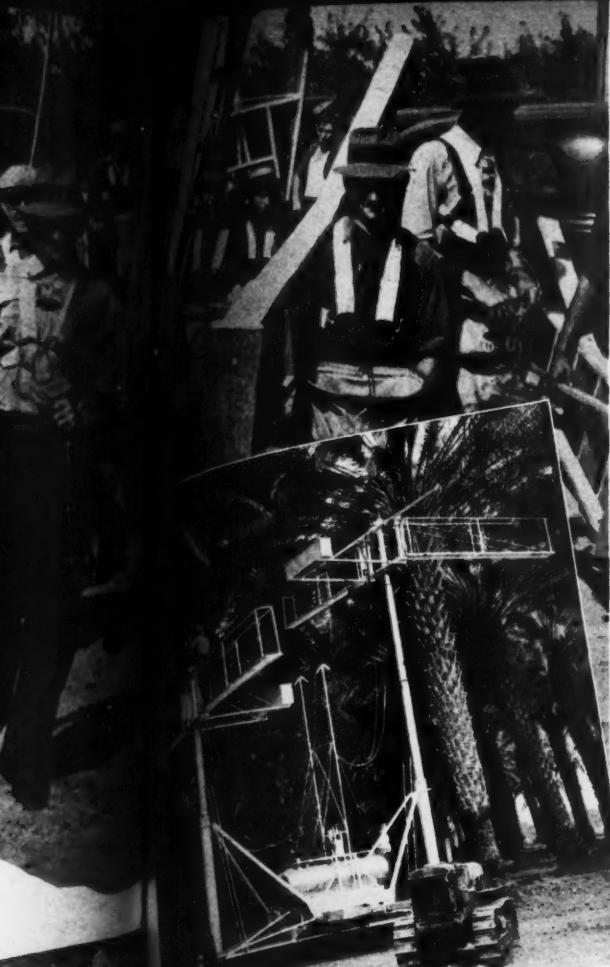
Merrill Iron Monkey

But the champion of the orchard machines this year is the Iron Monkey developed by C. A. Merrill of Bakersfield, Calif., which is being used for the second season to prune, thin, and harvest 125 acres of peaches. A small, five horsepower Wisconsin gasoline engine under the platform powers the hydraulic controls for the four catwalks, giving either up and down or right and left movement for each catwalk. The machine is pulled through the orchard behind a truck but will be made self-propelled next year. Engineers think it will work as well in cherry, pear, apricot, fig, and other fruit trees. Merrill figures he is cutting costs "up to 50 per cent" since the machine is operated by skilled crews of regular workers who live on the ranch and who are paid by the hour instead of by the box. Obtaining

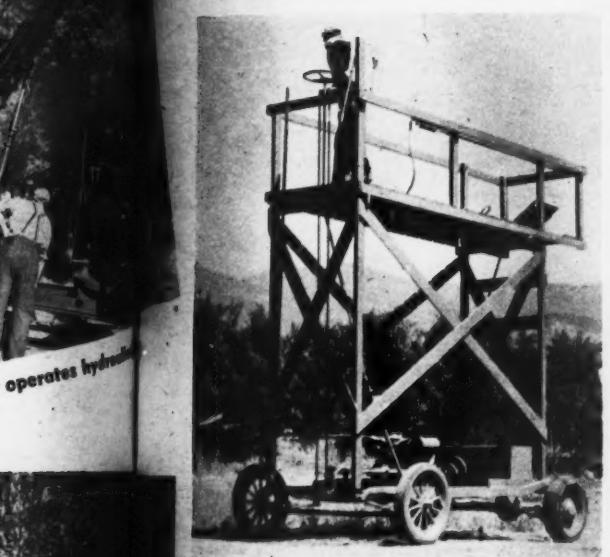


Davis Steel Squirrel tower operates hydraulic





Boone date tower goes up 40 feet!



Wheatley's mobile platform propels itself.



Jeep transports the Steel Squirrel easily.

about 160 days' use a year, Merrill figures that the machine, when self-propelled, will be in use most of the year. When work on the home ranch is completed, a trained crew will take it into citrus groves to pick oranges and lemons.

Davis Steel Squirrel

Another ingenious orchard machine is the Steel Squirrel, manufactured by the Davis Machine Works of Davis, Calif. Two telescoping towers on revolving bases enable two workers, at the touch of a lever, to move at will

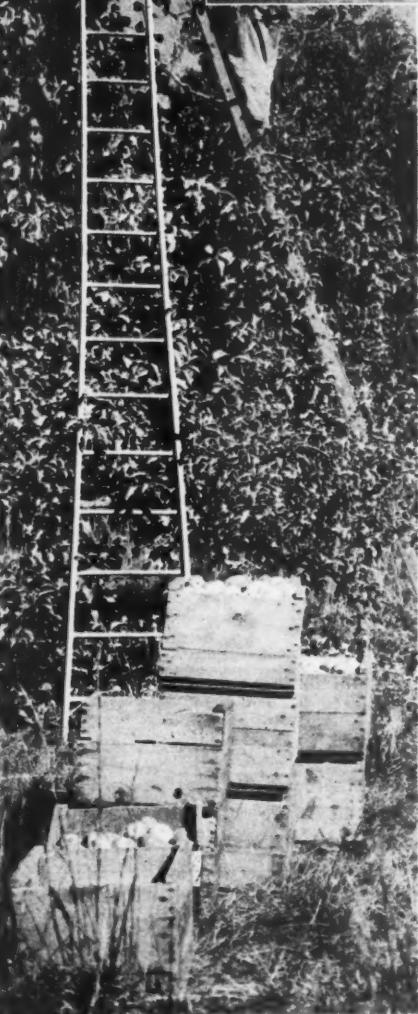
around and up and down the tree. There are three levers for raising, lowering, and swinging. The towers are hydraulically operated by the two men for pruning, thinning, or picking fruit, with the power being supplied by a compressor mounted on a trailer attached to the rig. The outfit is not self-powered but can be easily transported by Jeep or tractor.

Pelley Scissors

R. G. Pelley of Modesto, Calif., put an X-shaped platform on the bed of an Army truck for thinning peach-



The Duvander Catwalk and air-compressed pruners make pruning easier and faster.



es. From the ends of the "X" workers walk out to the trees and thin two rows at a time. When moving through the orchard, the "X" is closed like a scissors to permit the truck to move ahead without breaking tree limbs. According to Mr. Pelley, this rig cuts thinning costs about 50 per cent.

Duvander Catwalk

Don and Pat Duvander, cousins who operate a large prune orchard near Windsor, Calif., built a platform on their Ford tractor with an air compressor at the rear of the tractor. The air compressor will operate three compressed air pruners and makes it possible to raise the platform for pruning larger trees. Twelve catwalks extend from the platform to the trees. Two rows of trees are pruned at a time, one cousin working one side and the other the opposite side. For convenience, an oil drum is mounted at the rear of the platform for burning prunings and warming hands.

Losse Mechanical Elephant

Losse Orchards, who own and operate 400 acres of pears and apricots near Sunnyvale, Calif., on the edge of San Francisco Bay, have introduced an idea to cut a crew of 14

(Continued on page 14)

THE COMING EVOLUTION IN ORCHARD MACHINERY

(Continued from page 13)

hard-working handlers of fruit to five easy-does-it workers. Two types of machines do the trick: fork lift trucks to handle boxes of fruit on pallets and a tractor-drawn trailer with a low, flat bed. Fork lift trucks, designed and built by a local machine shop for orchard operation, transport the fruit on pallets to the specially designed orchard trailer. The fork lift trucks also remove the fruit from the trailer and load it on trucks for transportation to the cannery 50 miles distant.

King Power Hoe

Compressed air power pruners gave Frank E. King, Woodland, Calif., an idea for the automatic hoe. Using a Schramm compressor on rubber tires, pulled by a small farm tractor, he swings a boom from the compressor with enough width to plug in as many as 12 hoes for operation by air power. The hoe shuttles in and out from the lower end of the handle. The worker does not lift and chop but merely steers the hoe to cut down weeds or thin crops. King has also developed air-operated saws, knockers for nut trees, and short-handled shears for vineyards.

Bulk Handling

Placing fruit in boxes and emptying boxes at the packing shed is a costly, laborious operation which is also under attack by economy-minded

the packing house. One man replaced eight. Although excessive bruising was feared, especially for tender varieties like McIntosh, Bailey states that never has he done a more careful job with less bruising and stem puncturing.

Bulk handling of citrus fruit also pays off with the Arizona Citrus Growers Association. According to Manager Donald Tyler, an investment of \$21,500 in three narrow-bodied trucks and other bulk handling equipment is expected to reduce labor bills \$3,000 a month as well as eliminate an annual expense of \$15,000



Bulk handling in orchard cuts labor cost.



The Losse fork-lift tractor with pallet.



Special low trailer for moving boxed fruit.



An air compressor makes the King power hoe automatic.

growers. At Burnt Hills, N. Y., Claude Bailey empties picking bags of apples directly into eight two-wheel Army surplus box trailers holding about 40 bushels each. On peak harvesting days, one tractor with driver and eight trailers can easily haul 1,000 bushels of fruit. In previous years the same operation required two tractors, two flat-bed trailers, and two crews of four men each to distribute empty boxes and pick up and haul fruit to

for new field boxes and box repair.

The Future

Mechanizing the time-honored orchard operations of pruning, thinning, and harvesting opens up new vistas in fruit growing which cannot help but stimulate the imagination. Mobile machines now bring pickers to the tree and already plans are being made to incorporate with these machines automatic picking devices to

eliminate the last of the hand labor in harvesting.

Because of their high cost, hand operations have placed fruit in the semi-luxury class. A completely mechanized orchard operation, from tree hole diggers at planting to mechanical harvesting, is many years away; but it conceivably can cut costs to such an extent as to make fruit available to the pocketbooks of all Americans.

600,000 FROZEN CHERRY PIES

NORTHERN Michigan—cherry center of the world—produces a variety of cherry products; but none is so good as the frozen cherry pies produced by George and Althea Petritz of Beulah, Mich. Their company, Pet-Ritz Foods, formed in 1947, produced 200,000 cherry and apple pies the first year and production is now at 600,000 a year with the goal one million pies for next year.

In every pie is one pound of frozen fruit; thus, 1949 production will use up one million pounds of processed fruit—no small amount when measured in terms of orchard production. And Pet-Ritz Foods is just one of a number of rapidly expanding frozen pie companies whose total consumption may amount to a major outlet for frozen fruits.

Basis of the idea for the Petritz frozen pie business was developed by Mrs. George Kraker whose husband is a prominent Beulah, Mich., apple and cherry grower. Mrs. Kraker began selling fresh cherry pies to the Michigan summer tourist trade at her famed Cherry Hut roadside market. Her home-baked cherry pies became great favorites of the passing roadside tourist trade. At the peak of the season Mrs. Kraker baked between 300 and 400 nine-inch pies a day.

Thus, pies were not new to Althea Petritz, who helped her mother, nor were pies new to George Petritz. Before the war, at Marquette University, he worked his way through college by covering a route for the Owen Baking Company of Milwaukee, Wis. One of the first to sign for the armed services, George was captured by the Japs at Corregidor and spent two and one-half years in a prison camp where he became closely acquainted with pies made of squash, rice flour, and Red Cross powdered milk. After miraculously escaping from a bombed Japanese prison ship, he was discharged from the Navy with the Navy Cross for valor and the aftereffects of a bad case of malaria.

It was the malaria that re-introduced George Petritz to the pie business. After meeting and marrying Althea Kraker at Northwestern University, he was compelled for health reasons to take a job in the country. Althea suggested freezing pies like Mother baked in the cherry country



Petritz frozen cherry pies are packaged in a white cardboard carton with waxed interior, then conveyed automatically to the wrapping machine where boxes are securely wrapped in Cellophane, attractively printed to show the luscious, tempting cherry pie in natural color.

of northern Michigan, and the idea was born.

The operation at the Pet-Ritz factory is quite simple for a business with such large potentialities. Frozen Montmorency cherries are obtained from the Cherry Growers Co-operative of Traverse City. Placing automatically rolled dough over the pie tin, adding cherries, sugar, top crust, and finally trimming automatically takes less than half a minute. Freeze at -10° F. and the cherry pie is ready for transportation to big city market centers where it ultimately ends up in Mrs. Housewife's oven. Apple pies are handled in much the same manner, with Northern Spy the preferred variety. Needless to say, only the best ingredients are used in accordance with Mrs. Kraker's tested recipes.

The frozen cherry pie business is riding the crest of increasing consumer demand for bakery products in the frozen food business. The Petritz experience with frozen pies is being shared by some forty other companies. An eastern department store is selling frozen pies at the rate

of over 8,000 a month; and Little America Frozen Foods, Inc., a Pittsburgh processor, produces 3,000 pies daily and expects to double production.

"Because we freeze our pies, we can deliver a high quality fresh product to the consumer," says George Petritz, "and the day is not far away when we will deliver a pie which tastes as well as or better than home-baked pies." Therein lies the secret of the preference for frozen pies over the standard bakery pie. The housewife likes to be able to serve a high quality fresh-from-the-oven pie with a minimum of bother and work.

New outlets for fruits have followed in quick succession with the introduction of new techniques. From apple cider to such quality fruit products as frozen cherry pies and frozen orange concentrate is a record of achievement which points to new demands for processed fruit. And an indication of the future is foretold in the whispers of new technological processes for creating additional outlets and for widening and increasing the demand for fruit.

An Energetic Program For . . . STEPPING UP SALES OF FLORIDA CITRUS JUICES

By RAYMOND D. ROBINSON

FROM a pack of 200,000 cases during the season of 1928-29 to the staggering total of 51,000,000 cases for the season just ended! That is the story of the Florida citrus canning industry.

The task has not been easy and the value of constant scientific research has been clearly demonstrated. Early attempts to pasteurize the juice in open retorts failed utterly to produce a palatable product. In addition to unpalatability, biological experiments indicated clearly that the vitamin C content of the juice was entirely destroyed. Needless to say, the product was not accepted.

The intervening years have produced numerous improvements which have gradually increased the quality of the product, until today canned citrus juices are as standard an item on the grocer's shelf as coffee, beans, or milk. Canned citrus juices are today by far the cheapest source of vitamin C, being almost twice as rich in this essential vitamin as the next best source.

Despite this progress, the prospect of the future is even more stimulating than the performance of the past. Florida faces an ever-increasing citrus crop; numerous new products are in the experimental or early commercial stages, and the job of merchandising has only begun.

Opportunities in the field of merchandising equal to the accomplishments of the past progress in processing await the citrus canning industry. This job also will take patience, perseverance, and research. It will take all of the ingenuity displayed by the industry in overcoming its processing problems. Nevertheless, it can be done.

As the first step in this direction a master brand or effective substitute which would quickly identify the product as a Florida product should be devised. Advertising without an easily recognizable as well as an easily obtainable product is completely ineffective.

As the matter is now handled, the Florida Citrus Commission places eye-appealing ads in magazines, newspapers, etc., extolling the virtues of canned Florida citrus juices—

Mr. Robinson is Vice President of Dr. P. Phillips Co-operative, Orlando, Fla.



and then huge quantities of Florida juices are packaged in cans which do not mention a word about being processed or produced in Florida. The identity is lost and the continuity of the advertising destroyed.

Master branding can be easily accomplished without making it necessary for the producer to lose his identity. This could be done by the use of a seal facsimile on every can and every case.

To be effective—rather than detrimental—master branding, of necessity, would call for legislation establishing rigid grading and labeling laws. A high standard of quality under a label easily identified with the promotion efforts would further increase the per capita consumption of citrus juices, for, in spite of the tremendous yearly pack, many people are not yet constant consumers of this valuable inexpensive source of vitamin C. Under the present system in Florida, the Florida Citrus Commission is permitted to spend

the advertising tax money only for straight advertising. Tax monies

collected from fresh fruit must be spent on fresh fruit advertising and tax monies collected from canned fruit must be spent on canned fruit advertising—to the exclusion of other forms of sales promotion which are just as important and necessary.

Through the processes of law, this tax should become a "citrus tax" so that it could cover all forms of sales promotion, including educational programs, motion pictures, and sales booths—sales promotion in every form and wherever the opportunity presents itself or can be created.

When this change is accomplished, the law should permit the Citrus Commission to spend the citrus tax money as required because sales promotion often requires quick emergency work without time for legislative action.

A program of retail sampling, followed by on-the-spot sales in good
(Continued on page 35)

WHY AREN'T WE SELLING MORE APPLE JUICE?

By J. J. WILLAMAN, U. S. Department of Agriculture

THE EDITOR suggested the above question as a subject, and we have chosen it for a title. The question raised is a good one.

Let us look at the facts first. The accompanying chart shows the production of the five major fruit juices for the past nine years. Pineapple at eight million and mixed citrus at nine million cases in 1947 were omitted to avoid confusion in the chart. Fruit juices got their start in 1929 with grapefruit, followed in 1931 with tomato, in 1935 with blended citrus and pineapple, and in 1939 with orange and apple. The chart shows steep curves for tomato and citrus, but an almost flat curve for apple. For the past several years apple juice has accounted for about 1.5 per cent of the total juices produced. And this in spite of the fact that the apple is our best known fruit. Why aren't we drinking more apple juice?

This Laboratory has been giving the matter serious attention for several years. One of the first things we did was to set up and train a taste panel for evaluating the quality of the juice. We also made chemical analyses, of course, but we firmly feel that the ultimate and critical factor is whether a juice tastes good. We graded on a flavor scale of 1 to 10, 10 being the perfect juice and 1 and 2 being not only the worst but also those having a definitely objectionable flavor. We obtained directly from the producers samples of practically all commercial apple juices packed in 1940, 1941, 1946, and 1947. There were from 32 to 40 each year.

The table shows the percentage of juices that fell within the various flavor ratings. The conspicuous facts in the table are that during the last two years there were no excellent juices; that about 14 per cent were good; that half were only fair; that a third were poor; and that a number were objectionable.

Then, since we felt that we might have been too critical, we called a conference of juice manufacturers and research workers, and showed them what we meant by an 8 grade, a 4 grade, and a 2 grade. They agreed with our ratings.

We submit that here is the answer

Dr. Willaman is Principal Chemist in charge of the Division of Biochemical Research in the Eastern Regional Research Laboratory at Philadelphia 18, Pa., one of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, USDA.

| COMPARISON OF 1940, 1941, 1946, and 1947 COMMERCIAL APPLE JUICES | | | | |
|--|------|------|------|------|
| | 1940 | 1941 | 1946 | 1947 |
| | % | % | % | % |
| Typical apple flavor | | | | |
| 10-9, excellent | 2 | | | |
| 8-7, good | 28 | 15 | 14 | 12 |
| 6-5, fair | 53 | 51 | 36 | 50 |
| 4-3, poor | 17 | 32 | 36 | 34 |
| 2-1, objectionable | 2 | 14 | 4 | |

to our title question. More apple juice is not sold and drunk because too much of it is of poor quality—it doesn't appeal.

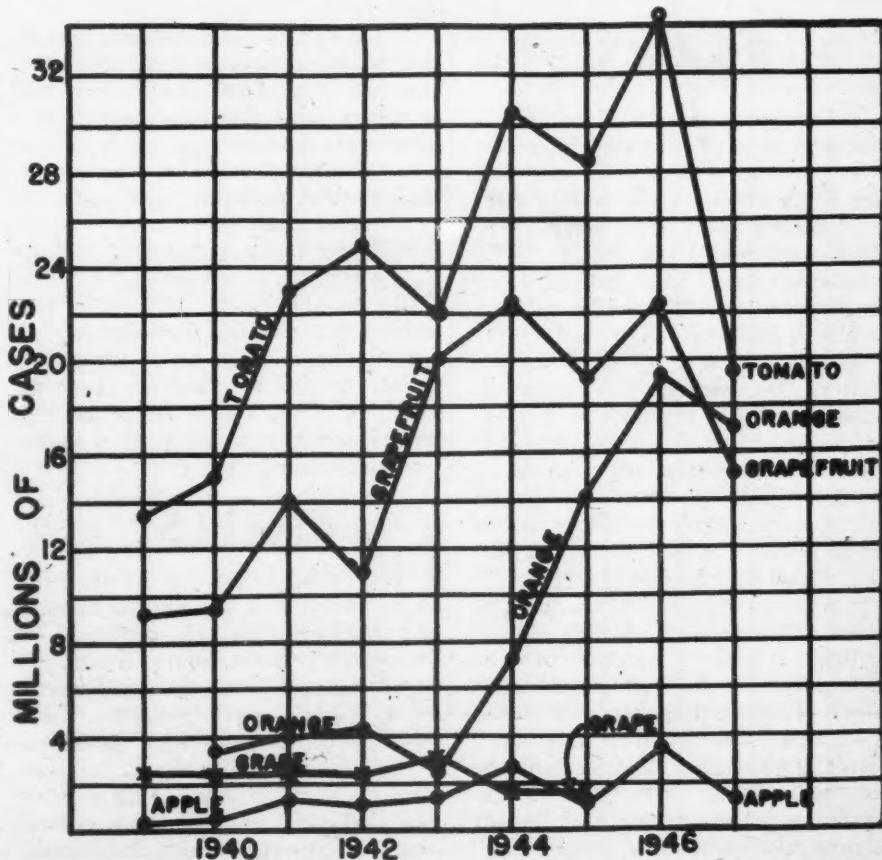
What is the trouble? Many factors, of course, enter into the final nature and quality of juice. We place at the top of the list the quality of the fruit. The apples must be ripe, sound, and fully flavored. They may be small or misshapen or have blemishes, but they must be free of positive faults such as greenness or decay. If a poor-flavored juice comes out of the press, it is really im-

material about the clarification, the pasteurizing temperature, the use of ascorbic acid, or the choice of container. To be sure, these factors can ruin a good juice, but they can't by themselves make a good one out of poor apples. Other juice factors which bear watching are the total solids, which should be above 13 per cent and certainly above 12.5 per cent, and the acidity, which should be between 0.4 and 0.6 per cent. Blends of aromatic and of tart varieties should always be used.

We firmly believe that if all apple juice put on the market were of flavor grades from 6 to 9 (probably no one will ever make a 10) many times the present volume could be sold. Advertising, labels, selling methods undoubtedly come into the picture, but this article deals only with technical matters.

Incidentally, it will be interesting to watch developments on the blending of apple juice with that of other (Continued on page 32)

PRODUCTION OF FRUIT JUICES SINCE 1939





(Photo courtesy Soil Conservation Service.)

NATIONWIDE FRUITS

PEARS

Where pear blight is a problem in pear orchards, all blighted branches, twigs, and bark should be removed, care being taken to thoroughly sterilize pruning tools after each cut to prevent spread of the disease. The diseased prunings and cuttings from cankers also should be collected and destroyed at once.

Associate County Agent Dick Bartram of Wenatchee, Wash., recommends the following sterilizing solution:

One-fourth ounce of cyanide of mercury and one-fourth ounce of bichloride of mercury dissolved in seven pints of water, to which has been added one pint of glycerine. If the mercury compounds are used in tablet form, enough of each should be used to make a solution of 1 to 1000 parts, as directed on the container. The solution should be stored in a glass or earthenware container.

In the treatment of large cankers, the gouged-out area is usually treated with the mercury disinfectant to prevent additional blight.

In California pear districts a zinc chloride treatment of cankered and blighted trunks is used. It is not necessary with this treatment to remove the cankered area.

A 33 percent solution for young trees or trees with thin bark, and a 43 or 53 percent solution for older trees is used, according to Bartram.

The material is carefully painted directly on the entire surface of the canker and a short distance on the surrounding healthy bark. By marking the treated area with a crayon or paint, it is possible to examine the treated area later to see whether or not the canker has spread.

NUTS

The Farley is leading all varieties of pecans in total production of nuts and pounds of kernels produced in the variety trials being conducted by the Georgia Coastal Plain Experiment Station. In addition to these two qualifications, Farley possesses a high degree of resistance to scab and other leaf diseases. Other superior varieties for Georgia coastal plain are Stuart, Bradley and Moore.

CITRUS

Gradually increasing in extent during the last 15 years, the spreading decline of citrus now ranks third in the list of causes of tree decline in Florida, according to R. F. Suit of the Lake Alfred (Fla.) Experiment Station. It occurs on grapefruit, oranges, and tangerines budded on rough lemon, grapefruit, or sour orange rootstock. It has been found in eight counties, but is most prevalent in Polk County, Suit reports.

At first, spreading decline was thought to be a fungus or a virus disease. However, it was recently discovered that the citrus nematode is present on the rootlets of affected trees and apparently is responsible for the decline.

Treatment of affected trees with D-D (recently discovered soil fumigant) controlled the nematode, according to Suit, but killed the trees. Where only half of the root area was treated, the trees lost considerable foliage but were not killed.

● A theory of long standing is that fruit must be tree ripened for highest quality processed products, yet tree-ripened fruit rapidly becomes soft and shapeless when handled.

A six-year study just completed by USDA and Washington State College scientists disproves this theory, at least insofar as freestone peaches grown in Washington are concerned.

According to the study, best results for handling freestone peaches for either canning or freezing include picking from six to four days before the fruit becomes soft or tree ripe; ripening the fruit in partially-sealed boxes with controlled temperatures; and steam-peeling the ripened fruit to insure a smooth, well-shaped product.

The study also proved that the processing season can be lengthened by successful storage of ripened peaches at 31° F. for at least a week, and that the Hale is the State's best peach for freezing and the Elberta the best for canning.

Thus, Washington State growers are assured of a stable processing market for their growing freestone industry, which consists principally of J. H. Hales and Elbertas. Within the decade, 1936-1946, the number of freestone peach trees in Washington doubled. Peach production is now close to three million bushels, of which about 50 percent is processed commercially.

● The average cost of producing peaches in Utah in 1947 was \$1.66 per bushel including the container. Average price received by growers was \$1.74 per bushel. Net return: eight cents per bushel.

These figures are based on data collected by Earnest M. Morrison of the Department of Agricultural Economics, Utah State College, from 103 Utah farms in four of the six counties in which 95 percent of the State's peach production is concentrated. The 1947 crop totaled approximately 933,000 bushels. Per acre yield averaged 177 bushels, which Utah growers consider good.

Labor topped the list of cost items in this cost of production analysis, representing about 43 percent of the total costs. Of the various operations performed, the three most time-consuming were picking, pruning, and irrigating.

Overhead costs ranked second as a cost group and represented 29 percent of the total cost of production. Of the overhead cost items, interest on the capital invested in the orchard

was greatest, depreciation of the trees was next, with tax cost third.

Material costs constituted about 17 percent, with containers topping the list, and power costs 12 percent of the total cost of production.

As is true of all cost figures, as yield increased, cost per bushel decreased. It was found that trees between the ages of seven and 14 years yielded most fruit. Analysis of fertilizer treatment used was not made, but a significant increase in yield resulted from the use of fertilizers, the report showed.

● The green peach aphid is now rated as probably the number one agent in the natural spread of peach mosaic in western Colorado.

Since 1943 the experiment station at Fort Collins has been studying this insect, and their hundreds of tests prove that the aphid feeding on the flowers and early foliage of the peach transmits the virus.

Orchardists are urged to continue to fight peach mosaic by eradicating diseased trees, and to spray for aphid control.

The use of DDT in the fall has proved promising in peach aphid control, according to Dr. Leslie B. Daniels, associate entomologist. Control of summer hosts of the insect also is meeting with some success. Some 350 species of plants now serve as summer hosts of the insect. One of the most prevalent and efficient hosts in the area is the common bindweed or morning glory.

Dr. Daniels urges careful selection of the cover crop to be grown in the orchard, to make certain that no insects affect it as vectors of disease.

The green peach aphid, according to Dr. Daniels, transmits 31 diseases of the virus type, so the importance of controlling the insect is apparent.

● In the not too distant future fruit growers may be injecting hormones into their apple trees to induce flowering and fruiting at an earlier age.

At any rate, speculation along this line was aroused at a recent meeting of American Society of Plant Physiologists with the introduction by University of Wisconsin's Dr. R. H. Roberts of a crystalline substance which he believes had induced non-flowering cocklebur plants to flower. The substance itself was taken from flowering cocklebur plants.

Dr. Roberts has been searching for a hormone causing flowering for 15 years. However, he does not claim definitely to have isolated a chemical compound which will induce flowering in plants.

Such a chemical compound, scientists feel, would be a boon to fruit growers in the treatment of such varieties of apples as Northern Spy which do not blossom and fruit sometimes until they are 15 to 18 years old. Spread of bloom and irregular harvest in various plants might also be corrected with such a treatment.

● Have you ever wondered how color gets into the apple and on the apple? Chemists at West Virginia Experiment Station have wondered about this, too; in fact, for 16 years they have been studying not only how color gets into the apple and on the apple but also how to add color to the apple with the right sprays.

In their experiments, peelings of Winesap apples were boiled until very little residue remained. This residue was subjected to various chemical treatments. Finally, I. J. Duncan and R. B. Dustman of the station were able to tell exactly what makes up the coloring matter in the skin of the apple.

These two scientists then moved their experiments into the field and with the right sprays were able to add color to the apple. The effect of these sprays on the edible quality of the apple is now being studied.

● The ideal cold storage temperature for most apples is 31° F. A somewhat warmer temperature is needed for some varieties, as, for instance, the McIntosh, which develops brown core if kept colder than about 36°, and Jonathan, which suffers from soft scald. But the Delicious keeps best when cooled quickly to 31° and kept at that temperature. Tests have shown that when Delicious is stored at 36°, it ages as much by December as it would by April if kept at 31°, states the USDA.

GRAPE

● Vastness of California's grape industry is shown by Bureau of Agricultural Economics 1948 estimated production of more than 2,800,000 tons. New York will rank second with 52,000 tons, and Michigan third with 34,000 tons. The total U. S. crop is estimated at slightly more than three million tons. Thus, California produces about 15 pounds of grapes for each pound produced in all the other states. Usually, about 50 percent of the California crop is classed as raisin grapes, with the remainder divided about evenly between wine grapes and table grapes.

The 1948 U. S. grape crop will be the third in succession of more than three million tons. Pre-war average crop was about 2½ million tons.

State



NEWS

- Are You Up-To-Date on Labor-Savers?
- Ohioan Grows Near-Perfect Fruit

MISSOURI—Grape growing in the Missouri Ozarks has been given a new impetus by reason of a grape project sponsored by the Sears-Roebuck Foundation and under the supervision of the University of Missouri Extension Department and the Missouri State Fruit Experiment Station of Mountain Grove.

The project consists of 20 five-acre vineyards, located on farms in several Ozark counties. One-fourth of the acreage is devoted to the growing of the Herbert grape, an excellent table variety, and the balance to Catawba, a very fine juice grape. The Sears-Roebuck Foundation bought the plants for the project, furnished the wire for the trellises, and provided a large grape press for the extraction of the Catawba juice.

The first crop was harvested this year from the three-year-old vines. The table grapes were sold in two-quart tins through the Missouri Chain Store Council. The Catawbas were hauled in bushel baskets to the Fruit Experiment Station, where they were pressed into juice and the juice sold to wineries.

Returns from this first crop were so encouraging that other growers are keenly interested.—*Paul H. Shepard, Mountain Grove, Mo.*

NEW YORK—A very interesting use of the flame-thrower has been developed, or at least organized for use, by Russell Sage of Burt. Russell uses the flame-thrower to remove grass, small suckers, and refuse from around the base of his trees. He goes around the tree, throwing the flame away from the trunk toward the outer limbs and allows the mulch to burn away about three feet from the tree. He follows up the flame-thrower with a spray rig and douses everything to prevent any damage from burning grass and mulch.

To men who have had considerable trouble grubbing away from trees with the idea of keeping mice from completely girdling the trees, this appears to be a practical and time-saving stunt.

As Russell says, however, be sure your spray rig does not run out of water!—*D. M. Dalrymple, Sec'y, Lockport.*

UTAH—In his large apple orchard at Payson, A. C. Page has effected a saving in the cost of spraying that may be of interest to other growers. He attaches a swivel for the spray gun on the rear fender of the tractor which pulls the sprayer. By using a 12/64-inch disc and a 35-gallon-a-minute pump the tractor operator sprays the trees with one hand by merely pointing the gun that is attached to the swivel. The equipment is run continuously and good control of codling moth and mites has thus far been obtained by this method.

The Neway Hydromatic Pruner developed by Joseph Carneseca, Jr., is making it possible for one man to prune three or four times as much in a day. I have found this pruner very satisfactory and most of the users who have them are enthusiastic about them.

Another pruning method employed by many growers is the use of a wagon or stilts for peach tree pruning. We have found this saves considerable time but we do not recommend stilts for growers over 40 years of age because we have found older fellows do not bounce when they take a tumble.

A short pole with a hose attached, for thinning peaches and apricots, has been found worth while.—*A. Stark, Sec'y, Logan.*

CALIFORNIA—Food technologist Dr. E. M. Mrak of the University of California during the recent Prune Day held at Davis gave prune growers the following up-to-date information on the handling of their product.

Dehydration of prunes takes 18 to 24 hours as compared with two or more weeks for sun-drying. Fruits to be dehydrated should be harvested when mature but firm, and thoroughly washed. The use of lye reduces toughness of skin but may adversely affect the color. Inferior fruit should be removed but sizing and quality grading are considered uneconomical.

Dehydration should be done at not over 165° F. in a counter current tunnel having an air flow of at least 600 linear feet per minute. The fruit should be removed at 29 to 32 per cent moisture, blanched about four minutes in live steam, sorted and packed into moisture-proof, heat-sealable containers.

A treatment which may revolutionize prune processing was revealed by Dr. Mrak. It is now feasible and practicable commercially, he stated, to sterilize prunes in plastic-sheet lined cartons by adding a few drops of propylene oxide to the carton before heat-sealing it. The fumigant destroys all molds and yeasts and evaporates through the walls of the container, leaving the sterilized prunes tender and tasty.—*Peter Fabricius, P.F.*

"CHECKING UP"



W. W. Reynolds, who topped Ohio's 1948 clean fruit honor list, finds his Jeep makes it easy for him to check his orchard quickly.

MARYLAND—Growers in this State are much interested in any type of labor-saving devices that will speed up the job, lighten the hand work, or in any way improve, production efficiency or reduce the production costs any place along the line.

Pneumatic limb-lopers will be given a thorough trial as a possible "easier-upper" of that tedious and costly pruning job. The newer types of air-blast sprayer-dusters are being watched closely. Various types of spray masts, booms, and banks of clustered nozzles are under trial and critical checkup.

Light metal ladders are being "taken apart" in the hilly orchards and improvements may be expected. Wonder if somebody will work out a ladder on wheels and with easy adjustments that will allow speedy, easy, safe placement and adjustment? Some of the present truck-mounted platform ladders are not adapted to sloping land as found in some eastern orchards. (Mr. Vierheller is respectfully referred to his New Hampshire friend's State News item on page 24.—Ed.)—*A. F. Vierheller, Sec'y, College Park.*

OHIO—The 48-acre orchard of W. W. Reynolds of Utica, in Licking County, heads the 1948 "honor" group of 10 growers in the State who rated highest in the production of clean fruit, with an average of 99.0%. Mr. Reynolds' score of 99.93% matched that attained by Franklin Dietsch of Williams County four years ago. Scab spots on one apple and leaf roller feeding scars on two apples totaled the preventable insect and disease blemishes in the 4000 fruits inspected.

Second in the "honor" list is the 15-acre orchard of E. J. Downing of New Madison, with a score of 99.8% clean fruit. Not a single scab spot was found in the entire lot of fruit examined. Mr. Downing had an agreement with his hired men to pay a bonus at the end of the year, to be determined by the rating of his orchard if included in the honor group. Last year his orchard made first place.

The other eight orchardists completing the honor list include Russell Perry of Guernsey County, who scored 99.42% clean fruit and who has been in the select list for the past four years; Harold Moore & Sons of Ottawa County, with a score of 99.3%, the only orchard in northern Ohio, where scab was very prevalent this year, to make the select list; J. B. Lane of Greene County, whose 99.28% score put him in fifth place as compared with fourth last year; Wheeler Welsday & Son of Jefferson County, with a score of 99.04%, making this the fifth time they have been in the honor group in the last 10 years; and the following four growers who made the list for the first time this year: Dewey L. Bond of Belmont County, with a score of 99.03%; Southern Orchards Co., of Jackson County, with a score of 98.77%; Myron Baker of Warren County, who scored 97.75%; and Albert Livezey of Belmont County, who scored 97.71%.

Honorable mention for producing better than 97% clean fruit goes to: Herbert Koontz of Licking County; Otto Balduf

• (Continued on page 24)

Now...
Safe, Sure
Scab Control

when you use

DuPont FERMATE

ORGANIC FUNGICIDE

FOR APPLE AND PEAR SCAB, you can get more effective control with Du Pont "Fermate" fungicide. Growers use "Fermate" for these reasons:

- ✓ Outstanding control of scab either with dust or spray.
- ✓ Greener foliage, no stunting of leaves.
- ✓ Safe, no hot weather burning as with sulfur.
- ✓ Cleaner fruit—no russetting of tender varieties of either pears or apples.
- ✓ Higher yields result from the more vigorous foliage.

You get effective control of other fruit diseases with the same applications of "Fermate" that control scab: rust, bitter rot, black rot, leaf blight, apple blotch.

SEE YOUR DEALER TODAY for supplies of "Fermate," or write direct to Du Pont, Grasselli Chemicals Department, Wilmington 98, Delaware.

DU PONT CHEMICALS FOR THE FARM INCLUDE:

PARZATE*, FERMATE* and ZERLATE* Organic Fungicides; Copper-A Fixed Copper; DEENATE* DDT and MARLATE* Insecticides; AMMATE* and 2, 4-D Weed Killers; LEXONE* (Benzene hexachloride); KRENITE* Dinitro Spray; LORO*; SULFORON* and SULFORON*-X Wettable Sulfurs; Du Pont Spreader-Sticker; Spray Adhesive; PARMONE* Fruit Drop Inhibitor.

*REG. U. S. PAT. OFF.



OTHER FRUITS TOO

... benefit from "Fermate's" outstanding ability to stop fungous growth.

Peaches & plums: Excellent for brown rot.

Cherries: Stops brown rot and leaf spot.

Grapes: Best control for black rot.

Apricots: Effective for green jacket rot.

Cranberries: Stops fruit rots effectively.

Berries: Controls anthracnose cane blight.



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY



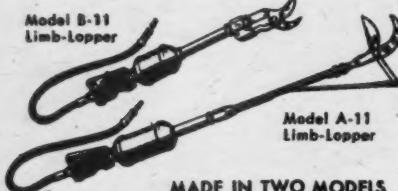
MAKE SHORT WORK OF PRUNING JOBS!

Growers report up to six times more pruning per man with the new air-operated Limb-Lopper—the pruning tool that cuts limbs up to 1 1/4" thick at the press of a trigger!

Made in models for all deciduous and citrus fruit trees, and for grape vines, berries, etc., the Limb-Lopper cuts pruning time 50%, and more over tiresome manual operation of ordinary clippers. Small compressors provide air pressure for operating from 1 to 4 Limb-Loppers—ideal for large acreage where pruning is a costly problem.

Send for Bulletin B illustrating and describing the Limb-Lopper, and ask us for complete details. WRITE TODAY.

Model B-11
Limb-Lopper



Model A-11
Limb-Lopper

MADE IN TWO MODELS

MILLER-ROBINSON COMPANY
6414 MCKINLEY AVENUE
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PROFIT BOOSTING STARTS WITH RAPISTAN CASTERS



Looking for a starting point for increased profits? End failures and maintenance on casters. Install RapiStan STEEL-FORGED* casters on floor trucks and mobile equipment. Flame-hardened raceways mean longer wear.

MAIL THE COUPON TODAY!

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THE RAPIDS-STANDARD CO., INC.
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Send bulletins on the equipment checked.

STEEL-FORGED CASTERS POWER BELT UNITS
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 RAPID-BELT CONVEYOR FLOOR AND HAND TRUCKS

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City _____ Zone _____ State _____

DEMAND IN 1949

● Consumer demand for fruit in 1949 is expected to be about as strong as this year, according to the U. S. Department of Agriculture. However, prices are likely to average lower if supplies are larger in 1949.

USDA forecasts continued uncertainty in export markets with fruit imports slightly higher in 1949. Larger citrus crops are forecast for next season with increases likely also in apples, peaches, pears, plums and prunes, and sweet cherries. Crops of apricots, sour cherries, and cranberries are expected to be smaller than this year.

● This year's production of major deciduous fruits is about 12 per cent smaller than in 1947, continues the USDA report and, as a result, prices are expected to average higher than in 1947. Latest crop estimate for commercial apples reports another decline—this time to 90 million bushels. This is the third unusually small crop for apples in six years; 1943 and 1945 also were short crop years.

● November 1 cold storage report of USDA shows 22 million bushels of apples in storage, 12 million less than last year at the same time. Of this total, over eight million were in Washington. Pear holdings on November 1 were two and one-half million bushels—almost two million bushels less than last year at the same time.

SUCCESSFUL SELLERS USE SIMILAR METHODS

● Highly successful fruit and vegetable departments in retail grocery stores show similar characteristics, according to the United Fresh Fruit and Vegetable Association. Growers would want the stores that sell their fruit to show the following characteristics:

1) Sales per employee of produce department more than \$20,000 a year.

2) Fruit and vegetable department in a prominent location in the store, which is clean, well-lighted, and provided with equipment for storage at controlled temperatures.

3) Produce turns over at the rate of 20 to 30 times a week.

4) Cater to housewives who want to do all their shopping at one stop.

● "Keydozzle" is a new word (key

does all) for a new way of selling foods. Memphis businessman Clarence Saunders, father of the Piggly Wiggly idea, has invented this entirely automatic system which decreases selling costs and which will bring food to consumers at prices lower than other stores.

In a keydozzle store the housewife simply orders with her key whatever food she wants, samples of which are displayed behind glass cases. With no delay, no trouble, and lower prices, the food is automatically delivered, ready to be carried out. Keydoozling does not, at present, include fresh fruits, vegetables, and meats; but plans are being made to sell these items in the same way by means of standardized, consumer-sized packages.

CANNED CITRUS COMPETES WITH FRESH

● During the 1947-48 season the California Fruit Growers Exchange, originators of the famed Sunkist brand for citrus fruits, shipped 78,466 cars or 74 per cent of the California-Arizona citrus industry's total. The giant co-operative holds claim to being the largest co-operative shipper of fruits in the world.

In his annual report, Paul Armstrong, general manager, stated that more than 160,000 carloads of the national crop were canned during the past season—an amount greater than the total production of all citrus fruit in California and Arizona.

Calling excessive canning uneconomic, Armstrong pointed out that the canned crop, in many cases, returned the grower less than the cost of production and also placed a low ceiling on the prices of fresh fruit. Armstrong attributed the large amount of canning to unlimited processing in Florida and Texas. According to the U. S. Department of Agriculture, this large pack is moving steadily into consumption with the help of lower retail prices. Another large pack for the 1948-49 crop is in prospect.

● Pasco Packing Company of Dade City, Fla., has initiated a plan to refund to buyers money lost as a result of declining prices within 30 days of purchase. Designed to protect the buyer and encourage the sale of citrus products, the plan is causing considerable comment in Florida.



Does More Work... Handles More Jobs!



No job is too tough . . . no weather too bad for the USTRAC!

Just make a note of the jobs on your farm that your present wheel tractor can't handle. Perhaps you need a drainage ditch . . . a gulley filled . . . a road repaired . . . stumps or rocks removed . . . hedge grubbed . . . post holes dug. You can do ALL these jobs and many more with the USTRAC . . . as well as your normal farm work such as plowing, disking, harrowing, harvesting, feed grinding, etc.

Pulls 3-Bottom Plow

The USTRAC pulls a three bottom 14' plow in third gear under normal condi-

tions. Will operate in wet, loose ground where a wheel tractor would bog down. No weather is too tough for the USTRAC!

Ideal for Orchards and Vineyards

Delivers 31.2 Brake HP, 20 HP at the drawbar — yet is only 37 inches wide and 54 inches high. Ideal for orchards and vineyards. Can't be beat for hillside work; rough terrain; narrow working widths. Extremely maneuverable and easy to operate. Economical — cuts fuel costs as much as one-third over wheel type tractors.

Complete Line of Attachments and Implements for the USTRAC

- BULLDOZER
- "SPEEDIGGER" Post Hole Digger
- FRONT END LOADER
- POWER TAKE-OFF
- HYDRAULIC CONTROL
- POWER WINCH
- BELT PULLEY
- SNOW PLOW
- LIGHTS
- MOLDBOARD PLOWS
- DISK PLOWS
- DISK HARROWS Single and Tandem
- SPIKE TOOTH HARROWS
- ROTARY HOE
- ROLLER-PACKER-MULCHER
- MANURE SPREADER
- FARM WAGONS
- TRAILER, Low type
- GRAIN ELEVATOR and UNLOADER

USTRAC's Dependability Backed by Thousands of Tractors

The USTRAC gives you all the features of the Clark Airborne tractor that performed so outstandingly during the last war. Over 3,000 of these tested, proved tractors are in civilian use today. USTRAC's 4-cylinder Continental gasoline engine is well known for its long life and dependability. Four forward and four reverse speeds, up to 5.8 MPH.

USTRAC "Speedigger"

Digs up to 600 post holes per day. All size holes, any depth. More "Speediggers" in use than any other. Fits 87 models of wheel and crawler tractors, Jeeps and trucks.



EARLY
DELIVERY!

Mail this coupon and
get all the facts!

U. S. TRACTOR CORP., WARREN, OHIO

I would like to know more about the USTRAC. Send complete details, prices, and name of nearest dealer.

Send folder and prices on the "SPEEDIGGER."

NAME _____

ADDRESS _____

STATE _____

B

PRUNE without damaging
your trees



TIFFANY PRUNERS
by
BUCKINGHAM

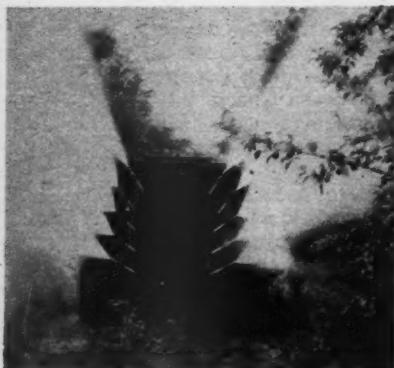
Wounds made by
Tiffany Pruners tend to "heal"
properly because: the thin cutting blade
slices the limb . . . cuts straight and clean
. . . does not split the bark or leave
jagged edges . . . reduces the danger of
rotting.

You can prune quicker with Tiffany
Pruners, too. Due to the scientific shape of
the hooked anvil and the correct curve of
the blade, the limb is gripped without
bruising . . . no slipping, no wasted motion.
Narrow jaws and slim points enable you to
get into tight places easily and quickly . . .
there are no projections to snag nearby
twigs and branches.

Tiffany Pruners are available at
regular supply houses. Additional in-
formation and prices sent on request.

BUCKINGHAM MANUFACTURING CO., INC.
15-17 Travis Street Binghamton, N. Y.

Look into the HALE CENTRIFUGAL Sprayer Before You Buy for '49



Careful buyers of Spray Equipment for '49 will
find the New Hale Centrifugal Sprayer pictured
above, well worth considering for '49.

Send for information today on this new and
thoroughly tested Hale Sprayer with Centrifugal
Pump. Capacities up to 80 GPM at 600 lbs.
pressure.

Dealer Inquiries Invited.

**HALE FIRE PUMP
COMPANY**
Conshohocken, Pa.

Bartlett No. 999

Hand Pruner



This Drop Forged Tool Steel nine inch Hand Pruner
has a crucible steel blade and hardened hook. Unsur-
passed. Special price \$5.75 prepaid. Ask for catalog
showing a complete line of pruning tools, shears, saws,
scrapers, etc. BARTLETT MFG. CO.

3044 E. Grand Blvd. Detroit 2, Mich.

24

STATE NEWS

(Continued from page 20)

of Ottawa County; Harry Lutz of Fairfield
County; William Packer of Jefferson
County; Mantle & Mantle of Lake County;
R. E. Frantz, W. H. Feicht, and Jerome
Hull, all of Mahoning County.

The "honor group" of growers has been
the outgrowth of an annual fall orchard
checkup by fruit specialists of Ohio State
University and the Extension Service to de-
termine the results secured in Ohio orchards
where a full spray program has been ap-
plied. Only commercial orchards over 14
years of age are included in the checkup.
High performance records in past years and
orchards considered worthy by their own-
ers or their friends determine eligibility for
participation.—T. H. Parks, Ext. Ent., Columbus.

VIRGINIA—An earnest effort was made
this fall by Virginia growers to follow the
"Better Grade and Pack Program" outlined
for them in midsummer during a series of
marketing clinics, reports Dr. E. L. Over-
holser, head of the Virginia Polytechnic
Institute Department of Horticulture, who
recently inspected the progress made.

Accompanying him on the inspection tour of
apple packing houses and cold storage
centers in the State were John F. Watson of
Staunton, executive secretary of the State
apple commission and of the State horticul-
tural society; A. H. Teske and Fred R.
Dreiling, extension service fruit specialists;
and J. H. Henley of the Federal-State fruit
inspection service at Winchester.

The group found that a larger percent-
age of apples was being packed this year
in the one-bushel Northwest apple box and
in the one and one-eighth bushel Eastern
box.

OREGON—An able scientist whose work
has been extremely valuable to horticulture,
not only in Oregon but elsewhere as well,
is the tribute paid by his fellow workers
to the late Dr. S. M. Zeller, plant pathol-
ogist of the Oregon Experiment Station,
whose death from a heart attack occurred
November 4 in Corvallis.

Dr. Zeller joined the Oregon State Col-
lege staff in 1919 after receiving his doc-
torate at Washington University in St.
Louis, Mo.

Most of the diseases that have plagued
berry and tree fruit growers in Oregon since
that time received his attention. Of recent
years Dr. Zeller's chief attention had been
directed toward solving the baffling problem
of virus diseases of stone fruits. He and
his associates brought about certification of
bud and scion wood for use by nurserymen
to insure the sale of virus-free nursery
stock.

Dr. Zeller's work on virus diseases of
strawberries also brought about certification of
nursery stock for that industry which
had been threatened with commercial extinc-
tion by inroads of the disease on the
principal varieties used by processors.—
Sam H. Bailey, Oregon Exp. Sta. Inf. Spec.,
Corvallis.

VERMONT—As a result of high produc-
tion cost and a shortage of satisfactory
labor in many orchard sections, the fruit
grower has been inclined to turn to labor-
saving and cost-saving practices.

Ted Zaremba of Shoreham reduced his
spray labor expense to an absolute minimum
by operating, by himself, a 55-gallon rig
and a seven-gum spray mast located on the
front bumper of his crawler tractor. He was
able to do all of the spraying and driving
himself and produced a scab-free and insect-

free crop of superior quality.

Another grower, B. H. Beck of Middle-
bury, sprayed a 900-tree McIntosh orchard
with a swivel gun, 20-gallon spray pump,
and a small powered tractor. He did all
the spraying and driving himself and was
likewise able to produce a superior crop of
fruit. Another grower, H. M. Pratt, in the
same neighborhood, sprayed over the top of
a 35-gallon per minute rig, driving his
Caterpillar tractor by means of leather
reins!

Other growers were able to reduce their
labor requirements considerably through the
use of the larger "speed type" sprayers and
in every instance were able to save a lot of
labor expense and produce a good crop.

We are inclined to think only of mechan-
ical equipment when we discuss labor-sav-
ing devices. Actually, a number of Vermont
growers have made use of a different and
still important labor-saving item. This is
the use and timely application of good
spray materials. In this way they have
obtained a high degree of insect and disease
control which, with normal conditions, re-
sults in a saving of both labor and materials.
—C. Lyman Calahan, Ext. Hort., Burling-
ton.

NEW HAMPSHIRE—Pickers roll merr-
ily along when harvesting apples from
the mobile picking platform used in the
Triple Trouble Farm at Gilford. The plat-
form, illustrated below, was made by Dr.
W. W. Smith, owner of the orchard and a
member of the University of New Hamp-
shire Department of Horticulture.

Built on the frame of an ordinary hay
rake, the platform is large enough to ac-
commodate two men. The planks are sup-
ported in such a way that they can be
moved in any direction, making it possible
to push them into the tree without break-
ing the branches.

The large wheels make it easier to move
the platform over rough ground than if
small wheels were used.

A few growers have built platforms on
hydraulic lifts attached to the front of their
tractors to elevate pickers up into the trees.
Such equipment, however, ties up expensive
tractors. The platform on high wheels is
a crude outfit but out of it may evolve a
more practical picking device than the
ladder.

Oh, yes! Someone will likely ask, "Why
were the rake teeth left on?" Well, Bill
says when the fruit is picked he just backs
the rake up under the tree and rakes up the
drops.

We grow them there McIntosh that
big in New Hampshire!—E. J. Rasmussen,
Ext. Hort., Durham.

IT'S REALLY HARMLESS!



Picking platform devised by Dr. W. W.
Smith of New Hampshire. Planks can be
moved in any direction without injuring
tree. Large wheels permit easy movement.

For Holiday Hauling and ALL HAULING

Many, many days and "nights before Christmas" thousands of motor trucks are as busy as old St. Nicholas himself, aiding in important holiday preparations.

The tree and its trimmings, the turkey and its fixings, the brightly wrapped gifts for dad and mother, sis and brother . . . in fact all the things we eat, wear or use at Christmas time or any time . . . are all transported by truck during some stage of their travels.

GMC trucks . . . light, medium and heavy duty, gasoline and Diesel . . . are outstanding in ability and dependability, efficiency and economy. For holidays or every day, there's a GMC ideally suited to every job.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GASOLINE
• DIESEL

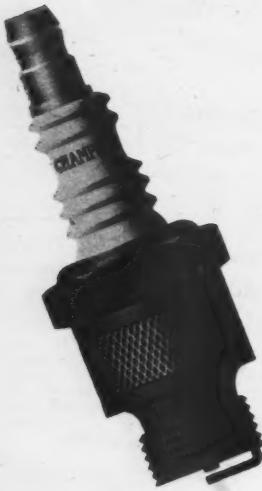
THE TRUCK OF VALUE

GAC TRUCKS



Dependable **CHAMPION**

America's Favorite Spark Plug



The Christmas tree harvest is on, bringing with it all that is implied by "Christmas spirit." Our Christmas spirit extends to the vast public we serve, for it is they who have made Champion America's Favorite Spark Plug. This preferred position is, we feel, due above all to Champion's inherent and traditional dependability, outstanding quality and value—marks which we pledge will always distinguish every spark plug to bear the name **CHAMPION**. Champion Spark Plug Company, Toledo 1, Ohio.



FOLLOW THE EXPERTS

DEMAND NEW DEPENDABLE CHAMPIONS FOR YOUR CAR

Listen to the **CHAMPION ROLL CALL**... Harry Wismer's fast sportscast every Friday night, over the ABC network

CALENDAR OF COMING MEETINGS AND EXHIBITS

Dec. 2-3—Kansas State Horticultural Society 82nd annual meeting, Kansas City, Kans.—Geo. W. Kinkead, Sec'y, Capitol Bldg., Topeka.

Dec. 6-8—American Pomological Society annual convention, in conjunction with Washington State Horticultural Association 44th annual meeting, Yakima, Wash.—W. D. Armstrong, Sec'y, APS, Princeton, Ky.; John C. Snyder, Sec'y, Wash. State Hort. Assn., Pullman.

Dec. 6-8—Fruit Growers' Short Course, Ohio Experiment Station, Wooster.—F. S. Howlett, Ohio Experiment Station, Wooster.

Dec. 6-8—New Jersey State Horticultural Society annual meeting, Claridge Hotel, Atlantic City.—Arthur J. Farley, Sec'y, New Brunswick.

Dec. 7-9—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, East Lansing.

Dec. 9-10—Oklahoma Pecan Growers Association annual meeting and show, Okmulgee.—F. LeCrone, Sec'y, Stillwater.

Dec. 9-10—Nut Growers Society of Oregon and Washington annual meeting, Vancouver, Wash.—C. O. Rawlings, Sec'y, Corvallis, Ore.

Dec. 13-14—Montana Horticultural Society annual meeting, Missoula.—Geo. L. Knight, Sec'y, Missoula.

Dec. 13-15—Illinois State Horticultural Society annual meeting, Abraham Lincoln Hotel, Springfield.—Curt E. Eckert, Sec'y, Belleville.

Dec. 15-17—Virginia State Horticultural Society 53rd annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

Dec. 16-17—Arkansas State Horticultural Society annual meeting, Springdale.—Earl J. Allen, Sec'y, Fayetteville.

Dec. 16-17—Peninsula Horticultural Society annual meeting, Dover, Del.—T. F. Manns, Sec'y, Newark.

Jan. 4-6—Massachusetts Fruit Growers Association, Inc., 55th annual meeting, The Auditorium, Worcester.—Wm. R. Cole, Sec'y, Amherst.

Jan. 4-6—Fruit Growers' Short Course, Virginia Polytechnic Institute Department of Horticulture, Blacksburg.—E. L. Overholser, V.P.I., Blacksburg.

Jan. 5-6—Maryland State Horticultural Society 51st annual meeting, Hotel Alexander, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 5-7—Northeastern Weed Control Conference, Hotel New Yorker, New York City.—R. D. Sweet, Sec'y, Cornell University, Ithaca, N. Y.

Jan. 10-11—Central Illinois Horticultural Society annual meeting, Lincoln Douglas Hotel, Quincy.—Ray Leeper, Sec'y, Ursula.

Jan. 10-11—Utah State Horticultural Society annual meeting, Hotel Utah, Salt Lake City.—A. Stark, Sec'y, Salt Lake City.

Jan. 11-13—New Hampshire State Horticultural Society annual meeting, in cooperation with Vegetable Growers' Association, Hotel Carpenter, Manchester.—Daniel R. Batchelder, Sec'y, Wilton.

(Continued on page 32)

IN THE NEWS

E. D. WITMAN

Appointment of Dr. E. D. Witman of The Sherwin-Williams Co. to the new position of assistant to the director of the agricultural chemicals division has been announced by Donald S. Gaarder, division director. He will collaborate with Gaarder in technical, manufacturing, and sales operations.



E. D. Witman

Dr. Witman is a former associate professor of chemistry at Ohio State University where he also received his Ph.D in agricultural chemistry. He has been associated with Sherwin-Williams for 12 years, including his work on the company's fellowship at the university. Dr. Witman helped to develop the ester formulation of 2,4-D and has created numerous patented advances in agricultural chemicals.

SPURGEON TILLMAN

With the stepping up of the production of their Citrobag and automatic packer, the St. Regis Paper Co. has appointed Spurgeon Tillman, leading figure in the Florida Citrus industry, to the sales staff of the company. He will devote his time to the development of the citrus packing house and citrus buyers market for whom these products were specially designed.

Tillman was formerly sales manager of the Pasco Packing Co. and has been associated with Refrigerated Steamship Lines, Inc., and the Florida Citrus Commission.

SYLVAN I. COHEN

Dr. Sylvan I. Cohen has recently joined the staff of Gallowhur Chemical Corp. as plant pathologist and will direct research studies for the agricultural chemicals department. He was formerly assistant research professor in plant pathology at the Rhode Island Agricultural Experiment Station where he conducted research in the field of organic aerosol fungicides. In studying for his degrees at Washington State College, Dr. Cohen included investigations of vegetable and ornamental plant diseases.



S. I. Cohen

W. P. ADAMS

New assistant manager of the Plant Food Division of Swift and Company in Cleveland is W. P. Adams. He was transferred from Canton, Ohio, where he acted as field representative for the company.

The Plant Food Division manufactures Vigoro, a complete plant food, and other commercial plant foods. It is also a distributor for agricultural chemicals.

ONE HARDIE

meets every need

HARDIE gives you a big volume high pressure, rugged sprayer which easily can be fitted with inexpensive Hardie-engineered accessories that adapt the sprayer to any of many specialized spraying jobs. Every fruit grower and farmer needs a high pressure sprayer today for many purposes beyond the spraying of fruit trees. You can meet all these needs with the same Hardie.



- The Hardie Sprayrite Orchard Boom enables one man to spray as many trees as several men with hand guns. This boom can be rotated to either side and is readily adjustable for spraying any angle or altitude while in operation.
- The Hardie Multi-nozzle Orchard Boom sprays both sides of the row while the sprayer moves steadily along. Controlled from the driver's seat. Successfully used with larger sprayers only.
- Hardie single and multiple nozzle Orchard Guns make hand gun spraying easy, speedy and thorough. The Hardie Model TR202 provides single trigger control.
- Spray weeds with a Hardie Gun or a Hardie Weed Boom available in different sizes. The Hardie Low Pressure Manifold easily attached, converts high pressure sprayers to low pressure for application of growth regulating weed killers.
- Authorities agree that all sprays for control of animal pests, grubs, ticks, lice, mange mites, mosquitoes, heel flies and horn flies must be applied under high pressure. Any Hardie will do it.
- Any Hardie Sprayer is a powerfully efficient fire control unit. Hardie pumps are standard in many well known Fog Fire Fighter Trucks.
- Whitewash fences, buildings, etc. with your Hardie. Spray DDT in bins and barns. Flush out chicken houses and pens with a high pressure stream.

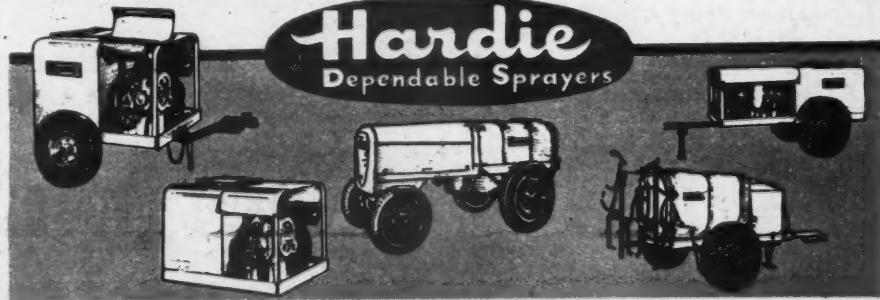
Write for the Hardie 1949 Catalog

THE HARDIE MFG. COMPANY

Hudson, Mich. Los Angeles 11, Calif. Portland 9, Oregon

Export Dept., Detroit 26 Canadian Office, Clarence W. Lewis & Son, Ltd., Grimsby, Ontario

Hardie
Dependable Sprayers



HYDRAULIC ORCHARD TESTED AUTOMATIC PRUNERS



- EFFICIENT
- PRACTICAL
- LABOR-SAVING

The "Off in a Jiffy" Neway Automatic Pruner—the most powerful ever made is sold in five models \$75.00 per unit. Air compressors, all sizes, and Self-Propelled are also available.

Extension lengths from 6" to 144" all interchangeable are provided. These new tested Automatic Pruners are a "must" in profitable orcharding. Dealerships available. Write today.

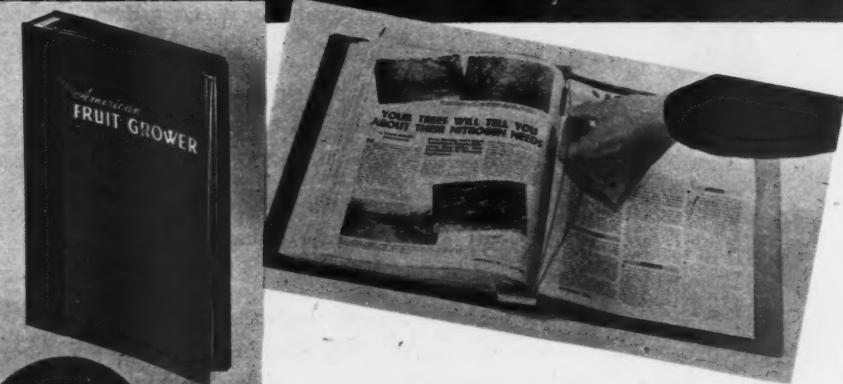
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NUT GROWERS NEWS

Breeding Filberts For The East

FILBERT or hazel nuts (filbert being the approved name for all *Corylus* species and hybrids cultivated for their nuts) are native over wide areas of the northern hemisphere. The commercial production of filberts in North America at present consists almost entirely of improved varieties of the European *C. Avellana* and its hybrids with other European filbert species. The filbert industry of America centers in western Oregon and Washington, with smaller commercial production in northern California and southern British Columbia.

Hybrids of the American filbert species, *C. americana*, have been produced which give promise of eventually extending filbert culture over a much wider area from the Lake States to New England and eastern Canada. *C. americana* furnishes climatic adaptability while *C. Avellana*, the other parent, is used to get increased size of nuts. Some hybrid varieties of this parentage (notably the "Jones Hybrids," Bixby and Buchanan) are already available in northern nut nurseries. Soon to be offered are the "Hazilberts" bred by Carl Weschke at River Falls, Wis.

The extensive filbert breeding project started at the Geneva, N. Y., Experiment Station in 1925, was also productive of some promising varieties. George L. Slate of the Geneva Station has reported the project's results in a paper appearing in the 38th Annual Report of the NNGA.

Of 1,999 seedlings, fifty-two have been propagated for more extensive tests.

"Of these 52," says Slate, "a few thus far have been outstanding when compared with the others. Possibly the best and most productive selection is No. 1265, Rush x Purple Aveline, which is the heaviest yielding of all. Nos. 1408 and 1467, both selected from a Rush x Cosford population, are close seconds to No. 1265. Farther down the list, but still among the best, are No. 110, Rush x Kentish Cob, and No. 157, Rush x Barcelona. Filbert breeders working under similar conditions would probably find it worth while to make these crosses and also to produce more seedlings from Rush x Red Lambert than were raised at Geneva."—J. C. McDaniel, Sec'y., Northern Nut Growers Assn., Inc., c/o Tenn. Dept. of Agriculture, Nashville 3, Tenn.

AMERICAN FRUIT GROWER

PROCESSING

(Continued from page 11)

The extent of several of the more important fruit processing industries is indicated by the data from *Western Canner and Packer* given in the accompanying tables.

Canned clingstone peaches represent the largest pack among canned fruits, and grapefruit juice usually leads other fruit juices, although in 1947 orange juice pack exceeded that of grapefruit juice.

The following selected statistics will indicate the relative proportions of the crops of various U. S. fruits that are consumed fresh and those that are used by the processing industries. The data are from the *Western Canner and Packer*, to whom our sincere thanks are due.

HANDY ANDY



Anyone can build one of these home-made brush burners, says Frank Troubaugh of West Frankfort, Illinois. It is made of angle iron and sheet iron and can be used in the orchard for burning prunings without burning or injuring the trees. There aren't any holes in the floor for a draft because the burner is open at the back and top, which creates plenty of air for quick burning of brush and prunings.

In 1947 the total used U. S. apple crop was 2,710,000 tons. Of this, 2,070,000 tons were consumed fresh; 160,000 tons were canned; 60,000 tons were used for juice; 82,000 tons were dried; 33,000 tons were frozen; and 305,000 tons were processed in other ways. The total processed was 640,000 tons.

From a crop of 199,000 tons of apricots the figures were: canned, 50,000 tons; juice (nectar), 20,000 tons; dried, 82,000 tons; frozen, 4,000 tons; and used fresh, 33,000 tons.

Practically the entire utilizable crop of California clingstone peaches is canned. In 1947 the U. S. crop of freestone peaches was about 1,505,000 tons. Of this, about 1,271,000 tons were used fresh; about 90,000 tons were canned; about 120,000 tons were

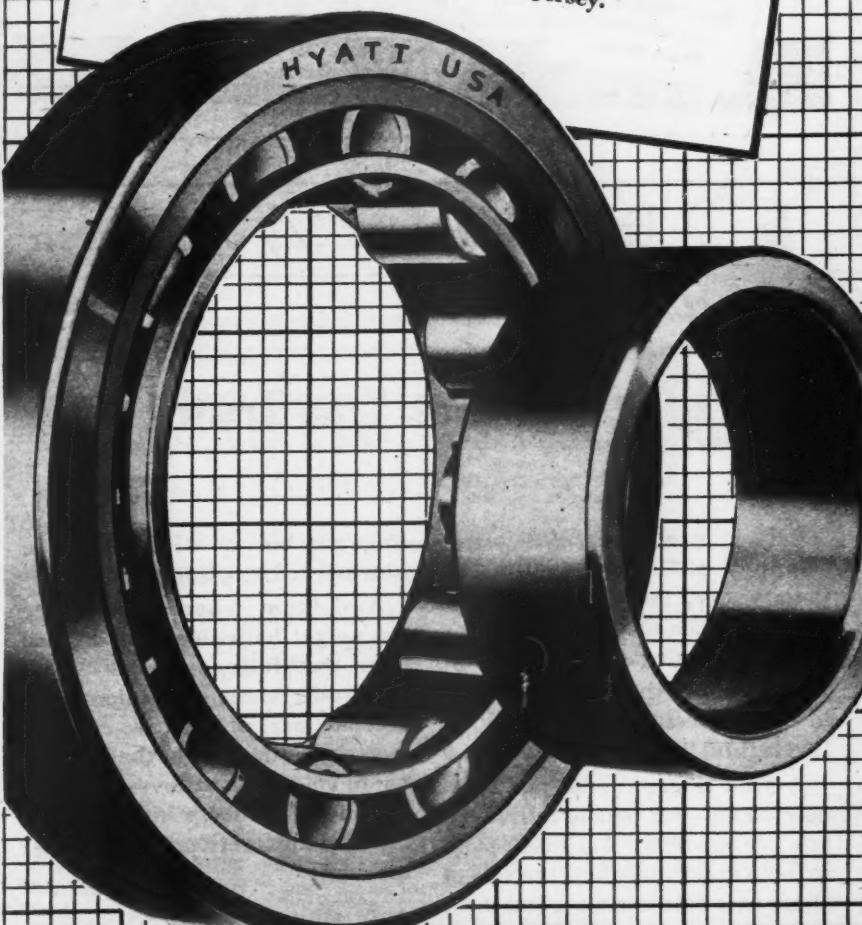
(Continued on page 35)

DESIGNED FOR FRUIT GROWER'S EQUIPMENT

Thousands of successful fruit growers know that a spray pump, tractor, truck or other equipment with Hyatt Roller Bearings applied in vital places is an assurance of smoother performance, longer life and minimum maintenance cost.

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HYATT ROLLER BEARINGS

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From where I sit ... *by Joe Marsh*



Get The Truth!

Called on my good old friend "Cappy" Miller, who edits the County Bee, the other day. And hanging up on the wall of Cappy's office is this slogan for his paper:

"Remember there are two sides to every question. Get both sides. Be truthful."

A good slogan ... not just for a newspaper—for people to live by, too. Because there'll always be two sides to every question: the side of those who vote one way, and those who vote another—the side of those who enjoy a temperate bev-

erage like beer or ale, and of those who swear by nothing but cider.

And from where I sit, once you've got both sides—and faced them truthfully, you realize that these differences of opinion are a precious part of what we call Democracy—the right of the individual to vote as he believes, to speak his mind, to choose his own beverage of moderation, whether beer or cider,

Joe Marsh

Copyright, 1948, United States Brewers Foundation

NEW

"Volume Gun"



Here's an irrigation system that sprays $3\frac{1}{2}$ acres with one nozzle. Called the "Volume Gun," it is manufactured by the Rainbow Sales Co. It features one-man operation, and 100 acres can be covered with two inches of water every 10 days. The gun has a single nozzle and is non-clogging permitting an even flow of water.

Cellophane Bags



Cellophane bags which leave fresh fruits completely visible for consumer inspection are now being supplied by the Dobeckmum Co. The bags are made from anchor-coated, heat sealing Cellophane, and they are available in six sizes and different types of Cellophane depending on the job to be done.

"Jackstacker"

Moving and high stacking of materials on skid platforms, pallets, or in sectional bins is made easy with the new telescopic "Jackstacker." Manufactured by Lewis-Shepard Products Inc., it is 100 percent electrically operated with capacities up to 400 pounds. All operations are controlled from the handle head and the operator never has to leave his position to maneuver the truck.

CO₂

Hand portable cylinder on the vanize a paten the sto release continu benefit

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Effi accom to ida pac 1945 with F that he and d costs.

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Sh a new on the This v their o tractor able sa wear, a

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Effic men c system turer. frost are ma with t range are des small a

DECE

- "VOLUME GUN"
- CO₂ SPRAYER
- "JACKSTACKER"

CO₂ Sprayer

Hand pumping is out with the new portable Chapin CO₂ sprayer. A cylinder containing CO₂ is mounted on the outside of a three-gallon galvanized tank. With the turning of a patented valve into the air-tight tank, the stored up energy of the CO₂ is released and spraying is immediate, continuous, and uniform without benefit of tedious hand work.

Fruehauf Trailer



Efficient moving of fruit can't be accomplished without a trailer, according to William P. McDonald, a Florida packer of name brand fruits. In 1945 McDonald replaced his trucks with Fruehauf trailers and he reports that he has more than tripled his loads and decreased his overall hauling costs.

"Step-Up" Transmission

Sherman Products, Inc. announces a new "step-up" transmission for use on the Allis-Chalmers WC tractor. This will permit growers to step up their operations with a wider range of tractor speeds; there will be considerable saving of gasoline, oil, and engine wear, and less operator fatigue.

Skinner Irrigation



Efficient, durable, fool-proof equipment characterizes Skinner irrigation systems, according to the manufacturer. Effective for both watering and frost control, the various sprinklers are made for large volume sprinkling with three-acre coverage, for long range sprinkling where high pressures are desired, and for regular irrigation where normal pressures do the job on small acreages.

DECEMBER, 1948

Introducing Biggest Advance in Pruner Design

WINDSOR Power PRUNER

1) **FAST**... designed for clean, close speed-cutting

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Replace old hand methods with Power Pruning. It cuts just as clean, it cuts just as close — and it cuts the time. Time is money. Save money with the Windsor Power Pruner... and do a more thorough job with less effort. For full details write today.

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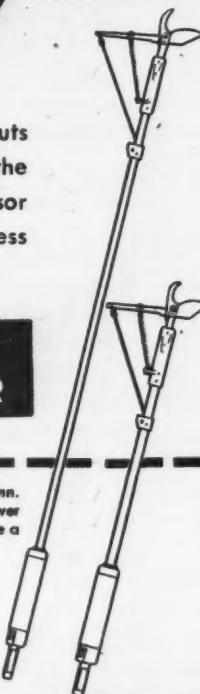
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Please send free folder describing new Windsor Power
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DEMONSTRATED BY THIS SEASON'S SHORT CROP POLLINATE FOR CROP INSURANCE

Hand pollination cheaper than thinning—very positive
Pole Hand Duster effective with patented Lyco method
Power Dusters available

Airplane application—accepted by many growers as most practical. 2000 acres airplane applied in 1947-1948.

Beehive Inserts now being used in 23 States—most economic method.

1948 EXPERIMENTS POLLEN CROSSING SHOW 100% INCREASE IN SIZE OF BARTLETT PEARS. OTHER FRUITS SIMILARLY AFFECTED.

CROSS POLLINATE FOR SIZE AND QUALITY.

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ers; Deer, Sheep, Goats—
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Prevents Winter Kill —
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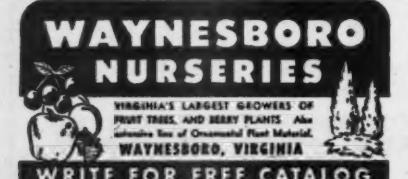
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Testimonials in November issue. Send
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TODAY—\$1 pkg.—25 to 40 trees; 4 lbs.
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Basic unit with Standard 7 HP Motor saws
down trees, bucks them up and clears
brush land, quickly turns waste land
into fertile fields. Available attachments
include: post hole digger, sickle bar
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welder. More diversified than any other
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work. Free literature and low prices
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Red x Black cross originated by our USDA which thrives
on all soils. Very productive, large, easy to pick, deep
purple fruit of finest dessert or canning quality. Vigorous,
upright canes, thornless, disease resistant and very winter
hardy.

Prices of "Potomac" for April planting
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W. A. BENTS NURSERIES *Fruit Specialists*
CRESCO, IOWA

CALENDAR OF COMING MEETINGS AND EXHIBITS

(Continued from page 26)

Jan. 12-13—Missouri State Horticultural Society annual meeting, Columbia.—W. R. Martin, Jr., Sec'y, Columbia.

Jan. 12-14—New York State Horticultural Society 94th annual meeting, Edgerton Park, Rochester.—Daniel M. Dalrymple, Sec'y, Lockport.

Jan. 13-14—Kentucky State Horticultural Society annual meeting, Paducah.—W. W. Magill, Sec'y, Lexington.

Jan. 19-20—Maine State Pomological Society annual meeting and trade show, Lewiston.—Rockwood N. Berry, Sec'y, Livermore Falls.

Jan. 19-21—Indiana Horticultural Society annual meeting, Manufacturers' Building, State Fair Grounds, Indianapolis.—Ben Sproat, Sec'y, Lafayette.

Jan. 20-22—Tennessee State Horticultural Society 43rd annual meeting, Andrew Jackson Hotel, Nashville.—E. L. Brinkley, Sec'y, Signal Mountain.

Jan. 26-28—New York State Horticultural Society eastern meeting, Kingston.—Daniel M. Dalrymple, Sec'y, Lockport.

Jan. 26-27—Horticultural Society of Northern Illinois annual meeting, Le Claire Hotel, Moline.—Lloyd L. Group, Sec'y, Franklin Grove.

Feb. 3—Nebraska State Horticultural Society annual meeting, College of Agriculture, Lincoln.—Wayne C. Whitney, Sec'y, Lincoln.

Feb. 9-11—Ohio State Horticultural Society annual meeting, Commodore Perry Hotel, Toledo.—C. W. Ellenwood, Sec'y, Wooster.

Feb. 10—Vermont State Horticultural Society annual winter meeting, Barre.—C. H. Blasberg, Sec'y, Burlington.

Feb. 10-12—West Virginia State Horticultural Society 56th annual convention, Martinsburg.—Carroll R. Miller, Sec'y, Martinsburg.

Feb. 15-18—Fruit Growers' Short Course, University of Vermont Department of Horticulture, Burlington.—C. Lyman Calahan, Ext. Hort., Burlington.

Feb. 17-19—Pennsylvania State Horticultural Association annual meeting, State Education Bldg., Harrisburg.—J. U. Ruef, Sec'y, State College.

Feb. 22-23—National Peach Conference, Sheraton-Coronado Hotel, St. Louis, Mo.—Carroll R. Miller, Sec'y, Martinsburg, W. Va.

APPLE JUICE

(Continued from page 17)

fruits—cranberry at the Massachusetts Agricultural Experiment Station, strawberries and raspberries at the Geneva (N.Y.) station, rhubarb, peaches, and berries at Virginia. These blends may not resemble any of the constituents clearly, but may be something entirely new. If successful, they will be new beverages to tickle our palates and new outlets for our various fruits.

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Small Fruits

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Pine, Spruce, Fir, Canadian Hemlock, Arborvitae, in variety. For growing Christmas trees. Windbreaks. Hedges. Forestry. Ornamentals. Prices low as 3c each on quantity orders. Write for price list. SUNCREST EVERGREEN NURSERIES, Dept. AFG, Box 642, Johnstown, Penn.

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PEARS (Bartlett) PLUMS (Native)

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Prices, Peach, Apple, Pear, Plum and
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RODENT REPELLENT, ETC.
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C. W. COLLINS

Retired senior entomologist of the USDA's Forest Insect Laboratory in Morristown, N. J., C. Walter Collins, 66, died October 18, in Morristown. During the 37 years of his service in the Department of Agriculture, from the time he entered in 1907 until his retirement in 1944, Mr. Collins conducted gypsy and brown tail moth investigations in New England and at Morristown Laboratory directed the investigation of insect carriers of Dutch elm disease fungus.

S. M. ZELLER

Oregon Experiment Station plant pathologist since 1919, Dr. S. M. Zeller died suddenly November 4 in Corvallis. Virus diseases of stone fruits and strawberries occupied Dr. Zeller's special attention during recent years.

RAY ROBINSON

Prominent apple grower of Winchester, Va., Ray Robinson, 65, died suddenly September 16. Mr. Robinson was secretary-treasurer of the Shenandoah Valley Apple Cider and Vinegar Company and had been a member of the Virginia State Horticultural Society since 1909.

FRED A. HILL

In the citrus business since youth, Fred A. Hill, 81, died recently at Redlands, Calif. In addition to packing and shipping activities, Mr. Hill owned extensive orchards in Redlands and in the Coachella Valley.

ROBERT A. McELHANEY

Retired fruit grower of North East, Pa., Robert A. McElhane, 85, died October 14.

WILLIAM M. JOHNSON

Extensive fruit grower in the Crozet section of Albemarle County, Virginia, William Martin Johnson, 72, died September 25 at Charlottesville. Mr. Johnson was widely known in the apple and peach industries.

GORDON L. NELSON

An active citrus grower since 1913, Gordon L. Nelson, 79, Redlands, Calif., pioneer, died recently.

JAMES BRIZZIE

Retired fruit grower and packer of Red Hook, N. Y., James Brizzie, 87, died September 16.

HOWARD G. COVILLE

Well-known among fruit growers and farmers of Virginia, Howard Granville Coville, 69, died recently in Waynesboro. Formerly engaged in fruit growing in the Crozet section, he had become affiliated in recent years with the Division of Markets of the State Department of Agriculture.

TREE EVERBEARING

BLACKBERRY

Grows in any backyard soil or climate. Produces up to six gallons per plant. Earnings \$1500.00 per acre for commercial growers. Two year old plants 3 for \$2.75, 6 for \$5.00. Special price and literature on commercial plantings.

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A complete line of apple, peach, pear, cherry and other fruits, selected type Chinese Chestnuts and other nut trees, Blueberry, Boysenberry, Strawberry, Raspberry, Grape Vines and Asparagus plants; Flowering Shrubs, Small trees and Evergreens. Selling direct with 70 years production experience. We guarantee satisfaction. Send for free catalog.

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PREMIUM-PRICED FULL-SIZED FRUIT Per Acre



PLAN NOW how you can begin introducing Dwarf Fruit Trees into your orchards. Dwarfs give you many more trees per acre yielding larger crops of luscious full-sized fruit commanding highest market prices. And these early bearing trees—at 2 to 3 years of age—cut your operational costs way down. Prune, Spray, Pick from ground level.

WRITE NOW for our catalog. Full information on Apples, Peaches, Pears, Plums and other choice varieties worked out on proven value understocks. Apples grafted on true East Malling rootstocks, Nos. I to IX according to special needs. Learn what varieties of what fruits you can successfully grow under your particular conditions—for your greater profit.

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150,000 PEACH TREES

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| 11/16" | Caliper | 5-6 ft. tall |
| 9/16" | " | 4-5 ft. " |
| 7/16" | " | 3-4 ft. " |
| 5/16" | " | 3 ft. " |

Buds taken from fruiting orchards. We offer the following varieties: Elberta—Golden Jubilee—Red Haven—Red Elberta—Hale Haven—Fertile Hale—J. H. Hale—Valiant—Vedette—Lemon Free—Salberta—Cumberland—Champion—Late Red—Oriole—Hochester—Belle of Georgia.

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PEACH TREES LOW AS 20¢

Pears, plums, cherries, necta, berries, etc. Grapes 10¢. Shrubs, evergreens, shade trees 25¢ up. High grade quality stock cannot be sold lower. Free 40 page color catalog. CLEVELAND, TENN.

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35 EIGHT FRAME 2 STORY HIVES OF GENTLE pure Italian bees in hives 3 yrs. old. Transportation connected. Disease free, state certificates furnished. The first \$245.00 takes them. CHAS. PYLE, Route 4, Paris, Illinois.

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FREAR—CHEMISTRY OF INSECTICIDES, FUNGICIDES, and Herbicides (practical applications) \$6.00; Hurd—Modern Poultry Farming \$4.00; New books on citrus. Books for farm and garden. Lists. THE HORTICULTURAL BOOK SERVICE, 200 Detroit Avenue, Concord, California.

DO YOU BUY SPRAY MATERIALS? "ENTOMA" gives information on sources. Insecticides, fungicides, weed killers, spray machinery, etc., listed. 416 pages. Published by Eastern Branch American Association Economic Entomologists. Prepaid \$1.20. Write GEORGE S. LANGFORD, Editor, College Park, Maryland.

CIDER MILLS

FOR SALE—CIDER PRESSES, NEW AND REBUILT Farquhar and Mr. Gilhead Presses. Repairs and supplies for all kinds of presses furnished. Apple Butter Equipment. Small Apple Sizers, Tanks, W. G. RUNKLES' MACHINERY COMPANY, 185 Oakland Street, Trenton, New Jersey.

CHAINS

CHAINS—TRACTOR, TRUCK, ROAD GRADER, BUS. Write for circular, give tire sizes—Prompt shipment. HORNER TRACTOR SALES, Geneva, Ohio.

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FOR SALE—DOGS OF THE HUNTING BREEDS. Coon, Opossum, Mink, Squirrel, Fox, Rabbit dogs. Ten days trial. Write for full information and literature. Prices reasonable. J. N. RYAN KENNEL, Murray, Kentucky.

FARM HELP WANTED

WE ARE INTERESTED IN LOCATING FRUIT FARM tenants for farms in the Western New York fruit belt. We have several farms under our management and must have responsible tenants who can operate all kinds of

farm machinery and also be able to handle hired help in the orchards. Write, giving experience, references and family details. ORBAKER AGRICULTURAL SERVICE, 1175 East Main Street, Rochester 9, New York.

FOR SALE—EQUIPMENT & SUPPLIES

NEW 1 1/4 INCH SELF-PRIMING PUMPS, 900 G. P. H. 1/2 h. p. Size 30 feet suction. BRUCE DOPPS, 225 Baehr, Wichita, Kansas.

FOR SALE: 200 GALLON, 600 LB. PRESSURE sprayer. Dual rear wheels. \$600.00. C. C. GOODIEL, 5620 Madison Avenue, Ashtabula, Ohio.

HANDY WEED TORCH THAWS, SPLITS ROCKS, destroys tree stumps, disinfects, sterilizes. Valuable labor saving information free. SINE, AF 2, Quakertown, Pennsylvania.

HORSE TRAINING

"HOW TO BREAK AND TRAIN HORSES"—A BOOK every farmer and horseman should have. It is free; no obligation. Simply address BEERY SCHOOL OF HORSEMANSHIP, Dept. 13812, Pleasant Hill, Ohio.

MISCELLANEOUS

THE FINEST ENGRAVED CHRISTMAS CARDS ARE yours, four for \$1.00 postpaid. Name engraved, Script or Old English. PAUL H. O'HARA, Penman and Engraver, Winona, Norfolk, Virginia.

WINES. MAKE YOUR OWN FROM RAISINS, grapes, berries. No special equipment needed. Printed directions 25¢ coin. OZARK ENTERPRISE, Cet 6, Missouri.

ORANGES

TREE RIPENED ORANGES OR MIXED FRUIT, NO color added, as sweet as nature can grow them. Ninety pound crate guaranteed fast service. \$2.25 per crate F.O.B. GEERS GROVES, Lake Hamilton, Florida.

ORCHARDS FOR SALE

80 ACRES: 50 ACRES IN FINE APPLES, GOOD improvements, loess soil, 2 miles Lexington, Missouri. Immediate possession. HENRY GRUNDMEIER, Waverly, Missouri.

MOST BEAUTIFULLY-SITUATED, SECLUDED Country Homestead between the Black Hills and Tennessee. 8.4 Acres, over 450 feet frontage Niobrara River, on Highways 20 and 83. Three Acres in Oak

BOOK REVIEWS

• **The Citrus Industry, Volume I: History, Botany, and Breeding** (\$10.00) Univ. of Calif. Press, edited by Herbert John Webber and Leon Dexter Batchelor is a treatise especially valuable to students, technicians, and investigators of citrus and to growers who want to know more about the history of their specialty.

• **Small-Fruit Culture, 2nd ed.** (\$4.00) Blakiston Co., by James Sheldon Shoemaker, is a textbook for colleges and vocational schools, but considerable practical knowledge is included for growers on new varieties, new insecticides, and new cultural methods.

• **Simplified Income Tax Information and Farm Account Book** (\$1.00), by Edward L. Flinn, is an easy-to-understand guide to help the farmer make out his Federal Income Tax Report for the current year.

Orders for these books may be sent to AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio, with check or money order enclosed.

and other post timber, one Acre young orchard, balance in native grass. Deep, sandy loam. Excellent Cabin Camp site adjacent to park. Injury necessitates sacrifice at \$180.00 Acre. HORNBY, Valentine, Nebraska.

FRUIT FARM FIVE MILES FROM READING, Pennsylvania. 45 acres apples, mostly Stayman and Delicious. 10 acres peaches. Gross sales this year \$12,000, with only half a crop. Two houses, packing house, implement shed, deep well. All necessary implements and equipment. Valuable road frontage ripe for development. Price, \$28,000 for orchard alone; \$50,000 with road frontage and 60 additional acres. Write or phone owner, F. E. KANTNER, 135 N. Fifth Street, Reading, Pennsylvania. Phone, Reading 2-5122 or 3-6024.

120 ACRE FARM, NEAR EFFINGHAM, ILLINOIS. 60 Acres in orchard. Mostly Grimes, Jonathan, Golden Delicious. Trees about 20 years old. Small house and barn. About 20 acres woodland. Best pasture and timber. Priced at \$13,000 including equipment. Write DR. I. D. ONDLER, Coggon, Iowa.

COME TO SOUTHEASTERN MISSOURI AND RAISE Peaches and other fruits. Good timberland can be had from \$15.00 to \$25.00 an acre. OTTO SCHELIN, Shock, Missouri.

PATENTS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D. C.

PECANS

FIFTY YEARS IN THE PECAN CULTURE. LET ME have your order for Fancy Texas Pecans. W. J. MILLICAN, Bend, Texas.

PET STOCK

67 VARIETIES, PIGEONS, PEAFOWLS, PHEASANTS, Monkeys, Rabbits, Pigs, Mice, Bees, Hamsters. Catalogue 10¢. Free List, HOUCK FARM, Tiffin 2, Ohio.

POULTRY

RAISE TURKEYS THE NEW WAY. WRITE FOR free information explaining how to make up to \$3,000.00 in your own backyard. Address NATIONAL TURKEY INSTITUTE, Dept. 233, Columbus, Kansas.

SCHLICHTMAN'S U. S. APPROVED, PULLORUM controlled chicks per 100 prepaid. Leghorns, Rocks, Reds, Wyandottes, Aurora, White, \$12.00. Assorted \$4.95. Pedigree sired and sexed chicks. Free catalog explaining two week replacement guarantee. SCHLICHTMAN HATCHERY, Appleton City, Missouri.

SUPERIOR GUARANTEES 98% LIVABILITY! Imported egg-meat strains. All popular breeds, as hatched or sexed. Crossbreds. Cut prices. Catalog free. SUPERIOR HATCHERY, Dept. H., Windsor, Missouri.

RABBITS

RAISE RABBITS COMMERCIALLY. BIG INCOME FOR full time producers, or handsomely supplement your present income in spare time. We teach you. Send 25¢ for bulletin, prices, hatch plans, etc. Get into this amazing industry now. RABBIT FEDERATION, 200 Burrell Building, San Jose, California.

WANTED TO BUY

WANTED: UNIMPROVED FARM, RATHER CHEAP. HERBERT AYER, Route 1, Newtown, Ohio.

WANT LATE MODEL 300 GAL. POWER FRUIT TREE sprayer and AC tractor or Case. OSCAR DECKER, Nashville, Illinois.

WANTED TO BUY A HYDRAULIC CIDER PRESS—give full particulars in first letter. Address AMERICAN FRUIT GROWER, Box 84, 1370 Ontario Street, Cleveland 13, Ohio.

AMERICAN FRUIT GROWER

CORN CENTER DOIN'S



Paw musta fell asleep—but be was sure wide awake when be bought B.F. Goodrich tires!

Ever feel as if you're plowing concrete? That's when you really appreciate B.F. Goodrich extra traction! And that's what many farmers said, in effect, when they voted 2 to 1 for the open tread—the B.F. Goodrich kind of tread. Two to one was the result of a nation-wide poll of farmers who were asked what type tractor tires they preferred for traction. The overwhelming 2 to 1 preference is easy to understand.

Just watcl. a B.F. Goodrich tractor tire operate! The tire is **flexible** because the cleats aren't joined. There are no closed pockets to pack with mud or trash. The clean tread gives extra traction that saves time and fuel. And the heavy, husky cleats give long wear... another money saver. Take the "2 to 1" tip from farmers who have used them; get open tread B.F. Goodrich tires!

An advertisement of The B.F. Goodrich Company, Akron, Ohio.

CITRUS JUICES

(Continued from page 16)

retail markets, is a simple way to create additional sales and to acquaint many non-users with a delicious and healthful product. The sample must be good and every subsequent purchase must be good.

A sound merchandising plan must be backed up by a plan which will enable the producer to keep his product in the distributive channels 12 months a year. The pattern of distribution for citrus juices over the past few years has made this possible even though juices were not canned during the off season or hot summer months. To maintain brand continuity, it has been necessary for the wholesale jobber to cover his requirements for summer sales no later than the month of June and store in his warehouse a large quantity of juice until early November when the packing season resumed. This practice has been detrimental to quality, for it has been definitely established that citrus juices deteriorate in flavor when stored in temperatures in excess of 40° F.

To overcome this handicap, and in order to provide juice of the highest quality the year around, temperature-controlled warehouses should be established in Florida and made available to all producers wishing to market under the chosen master brand.

My discussion has been limited to single strength juice; however, I firmly believe that an equal opportunity or possibly a greater opportunity exists in the concentrates and by-products field.

PROCESSING

(Continued from page 29)

dried; and about 24,000 tons were frozen.

For pears, the 1947 figures were: About 890,000 tons U. S. total; about 288,000 tons were canned; about 2,000 tons were juiced (nectar); about 20,000 tons were dried; and about 580,000 tons were used fresh.

Practically the entire crops of California prunes and Calimyrna figs are dried and most of the Muscat grapes are either dried for raisins or made into Muscatel wine. Probably the greater proportion of all eastern U. S. grapes is utilized for juice or wine. About half the berry crop is processed in one way or another, chiefly by freezing and preserving.

From these considerations it is readily seen that the fruit processing industry utilizes a very large proportion of the United States fruit crops and is a very important factor in the nation's general economy as well as that of the fruit growers.

DECEMBER, 1948

PORTER Pruners

All Porter Pruners have two sharp blades that cut clean, close and fast without damaging bark, thus speeding proper healing. All Porter Pruners are precision made with cutting heads of alloy steel, drop-forged and scientifically heat-treated to give long service.

TWIN-CUT:

No. 9 Professional: A superb one-hand tool. Cannot pinch hand, low operating pressure. Light and strong. Concealed locking device controlled with a touch of the thumb. Cuts green wood up to $\frac{1}{2}$ ".



POINTCUT:

Amazingly popular for orchard and nursery for cuts up to $1\frac{1}{4}$ ". Powerful and speedy cutting of sprout and sucker growth at the point. Patented 3-Power Shift for increased leverage.



POLE PRUNERS:

Rugged, trouble-free tools. Scientific design keeps weight down to a minimum. Made with poles up to 10 feet (solid) or 16 feet (jointed).



PORTER PRUNERS

SEND
FOR FOLDER
OF COMPLETE
LINE

Send for illustrated folder of the complete Porter Pruner line, including the Gooseneck designed for citrus, peach and pecan pruning — and the Heavy Duty Forester, an all-purpose, all-year utility brush cutter and pruner.

H. K. PORTER, INC. 74 Foley St., Somerville 43, Mass.



(CATALOG ON REQUEST)

THE GREENING NURSERY CO.
P.O. Box 605, Monroe, Michigan

EAR NOISES?



If you suffer from those miserable ear noises and are Hard of Hearing due to catarrh of the head, write us NOW for proof of the good results our simple home treatment has accomplished for a great many people. NOTHING TO WEAR. Many past 70 report ear noises gone and hearing fine. Send NOW for proof and 30 days trial offer.

THE ELM CO., Dept. 181, Davenport, Iowa



GOLDEN RULE Chicks

Hatched and Sold by the Golden Rule

WRITE FOR BIG FREE CATALOG AND DISCOUNT INFORMATION

Quality chicks of good breeding are your best assurance of EXTRA PROFITS. Backed by 26 years of BALANCED BREEDING. Golden Rule chicks are superior for strength, health and viability — superior for meat and eggs 100% live delivery. 98% viability GUARANTEED. 18 popular breeds. Sexed and cross breed chicks available. DISCOUNTS for prompt orders. Write today for big FREE catalog, 1949 price list and discount information.

GOLDEN RULE HATCHERY, Box 17, Bucyrus, Ohio

OTTAWA TRACTOR SAW



350 Cuts Per Minute
Make money cutting wood. Use Ottawa—fastest cutting. Cuts large, small logs easiest way. Fells trees. One man operated. Thoroughly in use. Built to last with heavy, stiff saw blade. Positive safety clutch control; uses power take-off any tractor.

OTTAWA MFG. CO., 3-832 Forest Ave., Ottawa, Kansas.



Ramblings

OF A HORTICULTURIST

Strictly For Women

A WOMEN'S SCHOOL with the usual curves but a new angle is the School of Horticulture for Women at Ambler, Pa. It provides a curriculum whereby women who are seriously interested in horticulture can get the grassroots background necessary for good jobs in horticulture careers.

The school is strictly for women, and all a girl needs for entrance is a high school diploma, a lot of enthusiasm, and about \$1200. That will carry her for a whole year: \$450 for tuition, \$600 for board and room in a beautiful dormitory, and about \$75 for books and laboratory fees. This leaves \$75 for minor expenses. Of course, she will probably need an allowance for incidentals, but \$1200 should cover the necessities.

The school was founded in 1910 by a group of Bryn Mawr graduates who had journeyed through Europe visiting and studying the various horticultural training institutions there. After being favorably impressed by the European courses of study, these women decided to start a school of horticulture in America similar to those they had been visiting.

Upon their return they did just that at Ambler, Pa., just 18 miles north of old Philadelphia. They founded it as a school to furnish practical horticultural training for their own sex, and they purchased 150 acres of land which is now devoted to raising practically all kinds of livestock and cultivating field crops in addition to several acres of tree fruits, berries, and vegetables.

The two-year curriculum now provides three courses of study to the students who may major in any one of them. These are: general horticulture, general agriculture, and landscape design, each requiring two years



for the student to complete the 36 credits necessary for graduation.

The school's director, Mrs. James Bush-Brown, a charming and gracious lady, is one of its earliest graduates. She entered the school in 1914 and was a member of the second graduating class. After her graduation she managed a large southern plantation, and while meeting some of agriculture's problems, advanced her skill as a horticulturist as well as an agriculturist. After serving a short while in the Extension Service of the State of Florida, she was recalled to the School of Horticulture and was appointed its director in 1924.

When I visited the school early one wintry morning, it was chore time, and several of the girls were down at the dairy doing everything from feeding, milking, and caring for the animals to cleaning the stables.

I found other students in the greenhouse potting plants, sowing seeds, and watering. Had it been spring, I no doubt would have found them in the field preparing the soil and putting out vegetables and farm crops.

June graduation is the climax of two years of hard but enjoyable work and study. What can they do, once they have their diplomas from the School of Horticulture? Here is what some of the graduates are doing now. There is a field secretary for the Pennsylvania Horticultural Society, an assistant farm manager at Long Lane Farm in Connecticut, a landscape designer for Steel's Nursery, N. J., a garden supervisor at George Washington's Mount Vernon home, and a garden consultant for the Burpee Seed Co. Some graduates are staff members of Brooklyn Botanic Garden, one is Research Assistant at the Ohio Agricultural Experiment Station, and another is horticulturist for the Meadowbrook Nurseries in New Jersey. Many of them are garden superintendents and, of course, many have married and now operate their own farms or horticultural enterprises. Thus, specialized horticultural training for women has proved to be highly practical as a foundation for many worthy careers, and the School of Horticulture for Women has done a splendid job in providing this education.—E.S.B.



The Governor of Oregon invites You



STATE OF OREGON
EXECUTIVE DEPARTMENT
SALEM

JOHN H. HALL
GOVERNOR

To American Industry:

In preparing a welcome for new industries and investments, Oregon has much to offer. We have hydroelectric power at rates as low as anywhere in the nation. We have a large labor pool, constantly growing, and a long tradition of good employer-employee relationships. Our mild climate permits all-year-round operations by industrial enterprises, and Oregon has easily accessible raw materials in abundance.

All types of transportation serve Oregon; rail, truck, barge, ocean steamer and airplane, at attractive rates. There is an unlimited supply of soft water. Our market is expanding, both domestically and abroad.

Oregon's population has increased 39.2 per cent in the past seven years.

There's a reason for the rush to Oregon!

Very truly yours,

John H. Hall

Governor



John H. Hall

* One of a series of advertisements based on industrial opportunities in the states served by Union Pacific Railroad.

Unite with Union Pacific in selecting sites and seeking new markets in California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, Wyoming.

*Address Industrial Department, Union Pacific Railroad
Omaha 2, Nebraska

UNION PACIFIC RAILROAD

Road of the Daily Streamliners

EDITORIAL PAGE



E. G. K. MEISTER
Publisher

H. B. TUKEY
Associate Editor

Products or "By"-Products

THE No. 1 delusion of the human race is the tendency to blame someone else for our own shortcomings. Dr. Willaman does not put it quite so baldly in his interesting article on "Why Aren't We Selling More Apple Juice?" on page 17, but the implication is there.

Part of the trouble is that we are inclined to think of apple juice as a side line or "by-product." We should drop the expression "by-product" once and for all and begin talking about "product." Because apple juice is a grown-up member of the apple family—so is vinegar, so is apple pectin, so are the other items that come from the apple.

The lemon industry not only sells fresh lemons but it also manufactures lemon juice, lemon concentrate, cold pressed lemon oil, distilled lemon oil, pectin flakes, citric acid powder, citrus pectin, sodium citrate, calcium citrate, dried lemon pulp, and granular citric acid. These are "products," not "by-products." After all, some 56 per cent of the fruit produced in the United States is now processed in one way or another. The manufactured products are the tail that is beginning to wag the dog. It is time to recognize these trends and to dignify the products from fruit plants as they properly deserve and to treat them accordingly all the way.

A Friend in Need

THE GROWING of an orchard, particularly a tree fruit orchard, into a remunerative proposition, is a long-time job, as we all know. Into a successful venture first of all goes much thought, then considerable financial investment and long hours of work and patience. The reward, provided Dame Fortune bids the grower well, is a beautiful crop of luscious fruit and, if the rules of the game follow through, a good profit.

But in fruit growing, more than

perhaps in any other big business built up over a period of years, the gamble on the future becomes greater rather than less. A drought, a freeze, a heavy insect infestation, and the grower is left high, dry, but not so handsome from the financial point of view. And if his other investments are frozen, he finds himself in a delicate situation.

That's not a very bright picture we've painted, but instances of this kind do occur; in fact, several come to mind immediately and that is the reason we are urging the reader to keep some of his investments in a semi-fluid state, such as in U. S. Savings Bonds. There is no risk in connection with these. They are readily available if needed before they mature. And they serve as a bulwark against adversity, fortifying the grower with the confidence he so richly deserves.

The Spirit of Christmas

"TIS the season for kindling the fire of hospitality in the hall, the genial fire of charity in the heart." These words of Washington Irving set the tone for the spirit of Christmas. For this holiday is a time for rejoicing, for making merry, for being charitable. It is a time for friendliness, generosity, and fellowship. And in this friendly spirit AMERICAN FRUIT GROWER wishes fruit growers everywhere a Joyous Christmas Season and a New Year of bountiful harvests.

Fruit Production at a Glance

| | 1937-46 | 1947 | Nov. 1, Est. 1948 |
|-------------------------------------|-------------|-------------|-------------------|
| Apples bushels | 115,058,000 | 113,041,000 | 90,288,000 |
| Peaches bushels | 66,725,000 | 82,603,000 | 67,467,000 |
| Pears bushels | 30,222,000 | 35,312,000 | 26,190,000 |
| Grapes bushels | 2,701,000 | 3,072,000 | 2,935,100 |
| Plums and Prunes tons (fresh) | 723,140 | 675,000 | 604,600 |
| Cherries tons | 170,000 | 173,000 | 201,280 |

CITRUS

| | 1936-45 | 1946-47 | 1947-48 |
|---------------------|------------|-------------|-------------|
| Oranges boxes | 83,488,000 | 113,900,000 | 111,680,000 |
| Grapefruit boxes | 44,593,000 | 59,640,000 | 62,860,000 |



Make Way For Merchandising!

THE FRUIT INDUSTRY is definitely launched upon a program of producing only quality produce which the consumer wants. It is also definitely launched upon a program of promotion and advertising. But what many in the industry need to know is that just production and advertising alone may not do the job. There is another important link in the chain, and that link is MERCHANDISING.

That is, it is not just enough to talk over the radio and to print in the papers about the virtues of fruits. In the final analysis, the sales are made by thousands of individuals who hand the fruit directly to the consumer. The attitude of these merchants and their sales forces can make the difference between success and failure in any sales campaign.

Did you ever step into a drug-store to buy a particular brand of toothpaste and find yourself emerging with a different brand of toothpaste, a toothbrush, some hair shampoo, and a box of candy for the wife or the girl friend? That's salesmanship! That's merchandising!

In recognition of this trend, the leaders in the fruit industry have set up training schools for merchants and sales people. They are studying the likes and dislikes of customers. They are learning whether a Cellophane cap over peaches is desirable or undesirable. Some folks say that a Cellophane cover will reduce the sale of apples by 30 percent over naked fruit.

But growers need not wait for the leaders in the industry to get a program organized and going. Each grower, in his own way, if he is an enthusiastic grower and proud of what he is growing and of the value of his products to the health and happiness of society is a potential salesman and merchandiser. A friendly word to the clerks in the stores. A little appreciation of the school board and the supervisors for developing a school lunch program. A helpful suggestion to the cook on how to make a better cherry pie. A smiling request for peach jam or orange marmalade at the hotel or restaurant. All of these are helpful. And think of all the folks in the world today who ought to have had not only one fruit but two fruits for breakfast! This is a real missionary project of a high order.

In short, to the fine work on production and advertising that is being done these days must be added more and more individual merchandising effort.

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GROWER

For Full Control in Cherries and Peaches there's the new John Bean LOW-BOY that's the answer to your need for automatic spraying in low and almost trees with overhanging branches. Low-Boy delivers from 35 to 60 gpm; is completely automatic; fully controlled by one man—the tractor driver. Eight spray guns—not just nozzles—drive material into top center of trees as well as getting undersides of lower leaves and branches. What's more, the John Bean LOW-BOY is low in cost, too. Ask your John Bean Dealer.

Protect your Orchards in 1949 with

John BEAN AUTOMATIC SPRAYING EQUIPMENT

Whatever your acreage, there is John Bean automatic spraying equipment to fit your orchard. You'll cut costs and assure profits by saving on labor. You'll protect your profits by more thorough spray coverage. Faster spraying provides spray protection when the crop needs it. These savings and profit protections of John Bean automatic spraying are now available for every commercial orchard. Ask your dealer for the latest information on the success-

New SPEED SPRAYER Features for '49 include new driver-operated spray pattern controls that permit 4-way spraying. You can now spray (1) right only, (2) left only, (3) both sides, (4) extra high for tall trees, or special wind conditions. Speed Spraying with John Bean Speed Sprayer is automatic spraying at its best. Trees are saturated with spray material. Speed Sprayer protects your profits by protecting your crop. Speed Sprayer, like all John Bean automatic spraying equipment, is built to fit the orchard.

ful control that is being achieved by hundreds of growers. Ask him too (or write) for the new 1949 John Bean catalog on Automatic Spraying. It will interest you.

JOHN BEAN
LANSING 4, MICHIGAN SAN JOSE, CALIFORNIA
DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

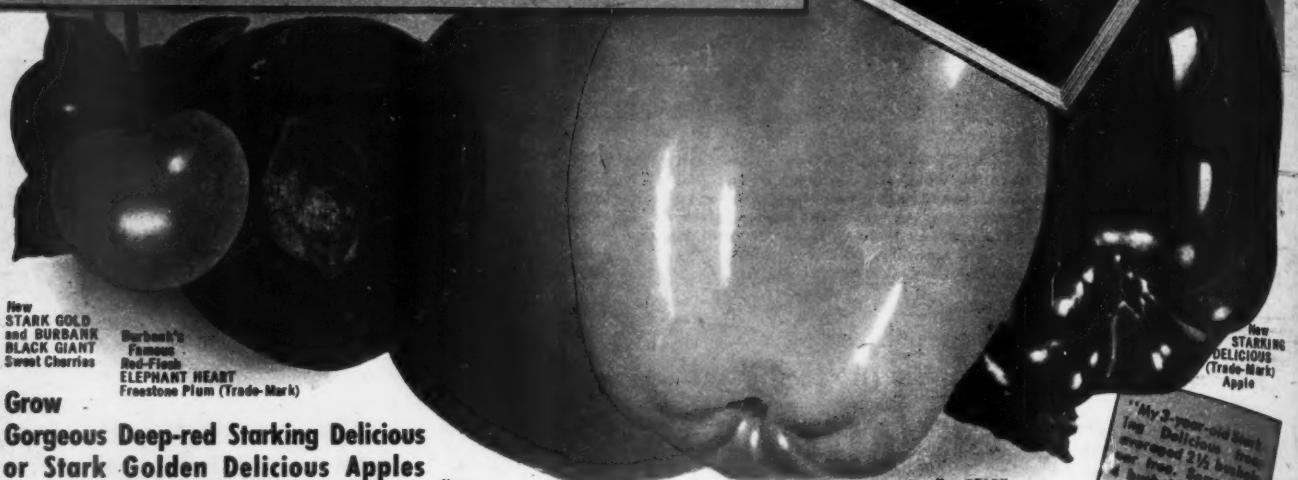
Automatic Spraying at Lowest Cost with John Bean Handimasts. This 4-gun mast is low in cost, and much less tiring to operate than a spray gun. The Handimast will also do the work of two men with guns—cutting labor costs. It has all of the features of John Bean masts: gun equipped—leak-proof swivel connections—tubular spring steel mast. For transportation, storing, or spraying in low trees, the Handimast is quickly lowered to horizontal position.

You'll Protect Your Crop, Save Time, Money, with the orchard-proven John Bean 4- or 8-gun Automasts designed for fast, thorough coverage in medium-to-large apple or cherry trees. The tractor driver can cover up to 40 acres of mature orchard a day. Automasts are equipped with spray guns, not just nozzles; to insure the drive that gives penetration into top-center of even the largest trees.

Amazing New Catalog FREE

Certified \$1.00 Retail Value
tells how

"Speeded-Up" Fruit Bearing
revolutionizes Home Fruit Growing
due to Improved Strains Grafted on
Double-Heavy Root Systems



New
STARK GOLD
and BURBANK
BLACK GIANT
Sweet Cherries

Burbank's
Famous
Red-Flesh
ELEPHANT HEART
Freestone Plum (Trade-Mark)

Grow

Gorgeous Deep-red Starking Delicious
or Stark Golden Delicious Apples

In your own yard — in little more than
the space of a garage.

New
HAL-BERTA
GIANT Peach (U. S. Patent)
Some weigh full pound.

Fruit 1/2 actual size.

New STARK
GOLDEN
Delicious
Apple (Trade-Mark)

New
STARKING
DELICIOUS
(Trade-Mark)
Apple

"My 3-year-old Stark
Golden Delicious tree
yields over 2 bushels
per tree. Some have
4 bushels."

JOS. A. BONHART

Many Trees Bear in 3 or 4 Years



Luther
Burbank

The new fruit
creations of
Luther Burbank,
World's
Horticultural
Wizard, are
propagated and
sold exclusively
by Stark Bro's.

Now ready for you is
the greatest Fruit Tree
Catalog ever published
... certified retail value
\$1.00—first, deluxe edition
Free, if you act at
once.

This shows how thou-
sands now revel in boun-
teous fruit grown right
in their own back yards
— home-owners who
have planted the modern
horticultural miracles of
Burbank and Stark, va-
rieties as much superior
to fruits of grandpa's
day as the modern dairy
cow is better than the
frontier cow.

These wise families can delight in
the glorious, fragrant blossoming of
springtime, almost from the first year.
And then, after an almost unbeliev-
able short time with ease and only
ordinary care, they begin the joys of
harvest—bushels of the choicest fruit
of famed varieties which regularly
bring as much as 5c to 10c each or
more at the store.

Many of these new wonder vari-
eties are patented improvements on the
original creations of Mother Nature.
The great Delicious Apple which was
originally discovered by Stark—propa-
gated exclusively from the original
parent tree by Stark until it spread
from sea to sea—has now been im-
proved. The New STARKING Deli-
cious (Trade-Mark) is redder, more
beautiful, reaches full color weeks
sooner, starts to bear even younger,
and bears even more bushels of finer
fruit than the original Delicious.
The New Stark Golden Delicious has

also reached phenomenal popularity
because it is the youngest-bearing
apple ever discovered and has a lus-
ciousness all its own.

Grow Fruit in Back Yard

Stark Varieties such as the Stark
Golden Delicious, so bountiful that as
few as 8 trees provide a family with
fruit, so young to bear that years of
waiting are avoided, so hardy anyone
can grow them almost anywhere that
farm crops mature — such horticul-
tural miracles now make possible a
back-yard orchard that takes up little
more space than a double garage.

Knew the Percentage of the Trees You Plant

Scientists have shown that trees and
shrub reproduce their superior qualities
as do livestock. Thus, to be sure of
getting trees that will bear from 1
to 3 years younger, that load them-
selves with bushels and bushels of
fruit, that consistently produce pre-
mium fruit, plant only trees propa-
gated direct-in-line without a break
from outstanding parent trees. Plant
trees propagated by the nursery that



"I got over 2 bushels from a 3-year-old
Stark Golden Delicious Apple tree — its
second crop." R. K. COBBAN.

made the original discoveries — the
nursery which has contributed im-
measurably to horticultural science as
investigation will quickly prove to you.

Like Doubling the Tree's Strength to Accelerate Bearing

Among the horticultural developments of Stark Bro's is the Stark Double-
Heavy Root System Grafting Method.
We use the whole, undivided root
system of a strong, vigorous seedling
to start a tree—never just one small
piece of root as is often done. This
gives the young tree a long head-start
like doubling its strength, provides
abundant nourishment for accelerated
growth to bearing size. In addition,
we "fatten" every tree in especially
rich soils—load it with a store of rich
plant food so that set-back is practi-
cally eliminated when you plant it.
Safe arrival and growth guaranteed.

STARK

NURSERIES & ORCHARDS CO.
Box 8-48, Town of Louisiana, Mo.
Largest in World... Oldest in America
Stark Trees Produced from Coast to
Coast in Best Nursery Soils

Accept Prize Tree Offer to Introduce
If there are none of these Stark
Wonder Trees in your locality, you
are eligible for a Prize Tree. Offer
good for a limited time only, so check
coupon below today.

"I SOLD \$1760.00 WORTH OF TREES IN ONE WEEK—SPARE TIME", REV. E. L. ECKERLY

Thousands are planting home orchards as urged by U. S. Gov't. This opens
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Stark representatives are making nice extra income selling exclusive
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- Check here for Free Fruit-Planting Guide.
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- Check here for Special 10 Tree Proposition.
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- Check here if interested in Liberal Weekly Cash Income Plan for Spare Time or Full Time Selling Stark Trees, Shrubs (Orna-
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for prompt reply to us
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